

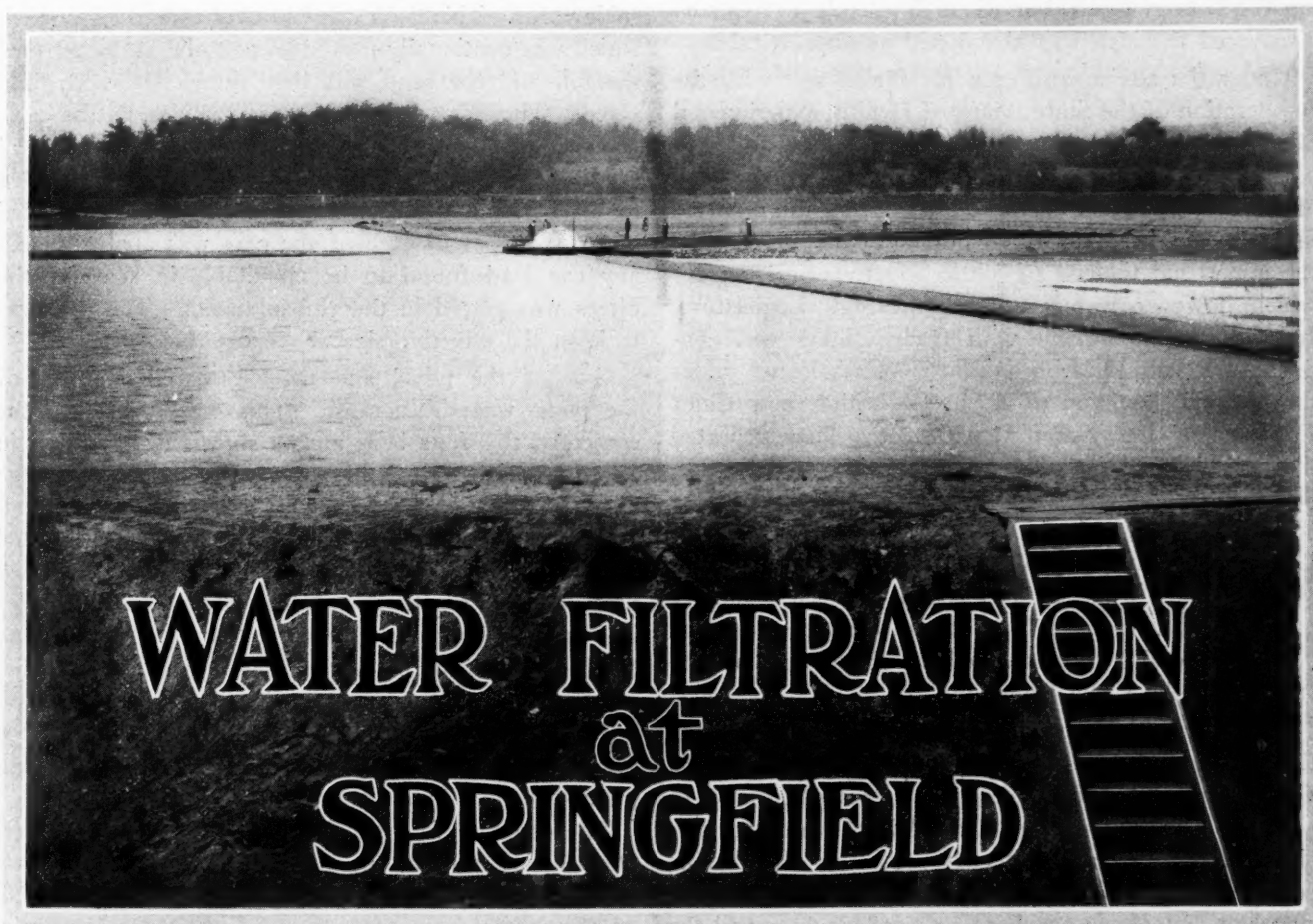
Municipal Journal

And Engineer

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No. 11



GENERAL VIEW OF LUDLOW FILTER

IT is probable that the difficulty encountered at Springfield, Mass., in obtaining an acceptable water supply by filtration has been greater than in almost any other city of the country; and the success obtained should certainly serve as an encouragement, as the methods gradually evolved should offer suggestions to other cities in like difficulty. The construction and the operation of the Ludlow filters are of the greatest interest to those in charge of water works, and the paper read on March 10 before the New England Water Works Association by Carroll F. Story, describing his experience in their operation, is of exceptional value. Space is not available to give all the particulars of this experience, but the chief points and conclusions are presented briefly below.

In 1872 the city took over the reservoirs and pipe lines of the Springfield Aqueduct Company, and was

compelled to at once increase the supply. From the first many were in favor of the use of Westfield Little River, but the estimated cost—\$1,000,000—was considered prohibitive, and it was not until 1904 that its use was finally decided upon, and the Little River water will in a few months be supplied to the city.

At that time the Ludlow reservoir was constructed by building two dams which flooded what was then known as Dark Island Swamp, the reservoir having a capacity of 1,800,000,000 gallons. This was undoubtedly a mistake, which has since been demonstrated to be a serious and costly one, for the swamp was covered with black muck reaching a depth in some places of 46 feet and having an average depth of more than 5 feet; in addition to which there were numerous small coves along the shore in which the water was very shallow and remained stagnant.

From the first the water from this reservoir was almost undrinkable during certain weeks of every year, due largely to the growth therein of anabaena. In 1890 another brook was diverted into the reservoir by a long canal with the hope that increased flow would diminish the trouble by increasing the circulation. By-passes around the reservoir permitted carrying fresh brook water directly into the mains during the periods of bad water in the reservoir, and water was also pumped from two small ponds for the same purpose, and to increase the supply which was already becoming inadequate. In 1900 the reservoir was drained with the idea of removing the bottom muck, but when the depth of this was discovered the idea was abandoned as impracticable.

Under the advice of Percy M. Blake, and with the co-operation of the State Board of Health, experimental filters were operated in 1901, but each of these failed to purify the water during a part of the time. In view of this Mr. Blake and the State Board of Health reported unqualifiedly in favor of abandoning this supply and recommending the use of Little River, permission for which, however, was refused by the State Legislature. In 1903 an experiment with twelve filters was conducted by Samuel M. Gray and Geo. W. Fuller under the personal direction of E. E. Lochridge, now Chief Engineer of the Water Department. They reported that double filtration and triple aeration would probably purify the water, but recommended that, as the supply would soon be inadequate, it be abandoned for Little River. In 1904 Allen Hazen reported upon the situation, and while he believed a somewhat simpler method of filtration might be designed which would be adequate, he also recommended the abandoning of this supply for the Little River one.

Finally in 1905 the City Council voted \$75,000 for the construction of a temporary filter after Mr. Hazen's design and petitioned the Legislature for permission to obtain a new supply from Little River, which permission was granted and the contracts were awarded as soon thereafter as possible. (In the MUNICIPAL JOURNAL AND ENGINEER for June 10, 1908, is described the covered reservoir to be used in connection with this new supply, a contract for which was let shortly after.) This filter was finally built at a cost for construction of \$50,723.94. Preliminary work on it was done in 1905 and it was completed in the spring of 1906 and went into operation in the summer of that year. As it was intended to use this for only a few years, the construction was made as simple and inexpensive as possible, which undoubtedly contributed somewhat to the difficulty and cost of operation, this being especially true of the failure to cover the filter.

The filters were built upon a long point of sand which extends into the reservoir, and contain four acres of effective area. A dike carried from the end of this point to one shore formed a clear water reservoir. The four one-acre beds are all on a level and are underdrained by 6 and 8-inch pipe having $\frac{3}{4}$ -inch openings at the joints and located in lines $12\frac{1}{2}$ feet apart. No concrete floor was laid, but the drains were

laid directly upon the leveled surface. This surface was several feet above the water in the reservoir and above a large central drain, 56 inches high and 30 inches wide inside, which received the effluent from them, this being aerated in dropping from the small to the large drain. Sand for the filters was obtained on the banks immediately adjacent, and was not washed, nor was it screened except for the purpose of obtaining gravel to be placed about the underdrains. Above this gravel the sand was deposited to a depth of five feet.

The sand was excavated by a steam clam-shell bucket and loaded onto a train of ten cars, each holding $3\frac{1}{2}$ cubic yards. This train was run over construction track which was continually moved so as to lie at the edge of the fill, and the sand was thus dumped directly into place. The illustration shows very clearly the convenience and economy of this method; also the natural grading of the material, in that the coarser stones rolled to the bottom. As soon as the train had been loaded with sand, that in each of the cars was analyzed, and any car load found to be unsuitable in size for the filters was placed in the embankments. The aim was to keep the effective size above 0.3 mm.

One of the novel and most essential features of the plant was the aerator. This was located in the center of the four beds and is shown in operation in the illustration. From the end of the 30-inch discharge pipe the water enters a concrete basin 30 feet in diameter, being aerated in overflowing from the elevated end of the pipe. Sixteen outlets from this basin, each provided with a gate, permit the water to be discharged into any one or more of the four filters. Surrounding the basin is a concrete apron, and beyond this a paving of large stones, the diameter of the whole being about 60 feet. Water is raised from the reservoir into the aerator by means of a 20,000,000-gallon centrifugal pump.

The essential features of the filtration are this aerator, the intermittent operation of the filters and the additional aeration following filtration secured by the fall of the water from the sub-drains to the main drain, and from this into the clear water basin. These are undoubtedly the secret of the successful operation of this filter. The capacity of the pump is sufficient to supply the necessary amount of water—about 14,000,000 gallons per day—in 16 hours. Intermittency of action is thus obtained, in addition to which, in operation, three beds are ordinarily in use at a time.

The filter was put into operation early in July, 1906, but a test of its ability was not obtained because there did not occur that year the difficult conditions which had existed in previous summers. The filters were not operated during the winter, as the quality of water was satisfactory during that season. In May, 1907, when Mr. Story took charge of the plant, the work of resurfacing the beds had been about half completed and by the first of June three of the beds had been re-graded up ready for operation. In doing this, all dirty sand was removed from the top and a layer of new sand was placed deep enough to bring the filters back to their

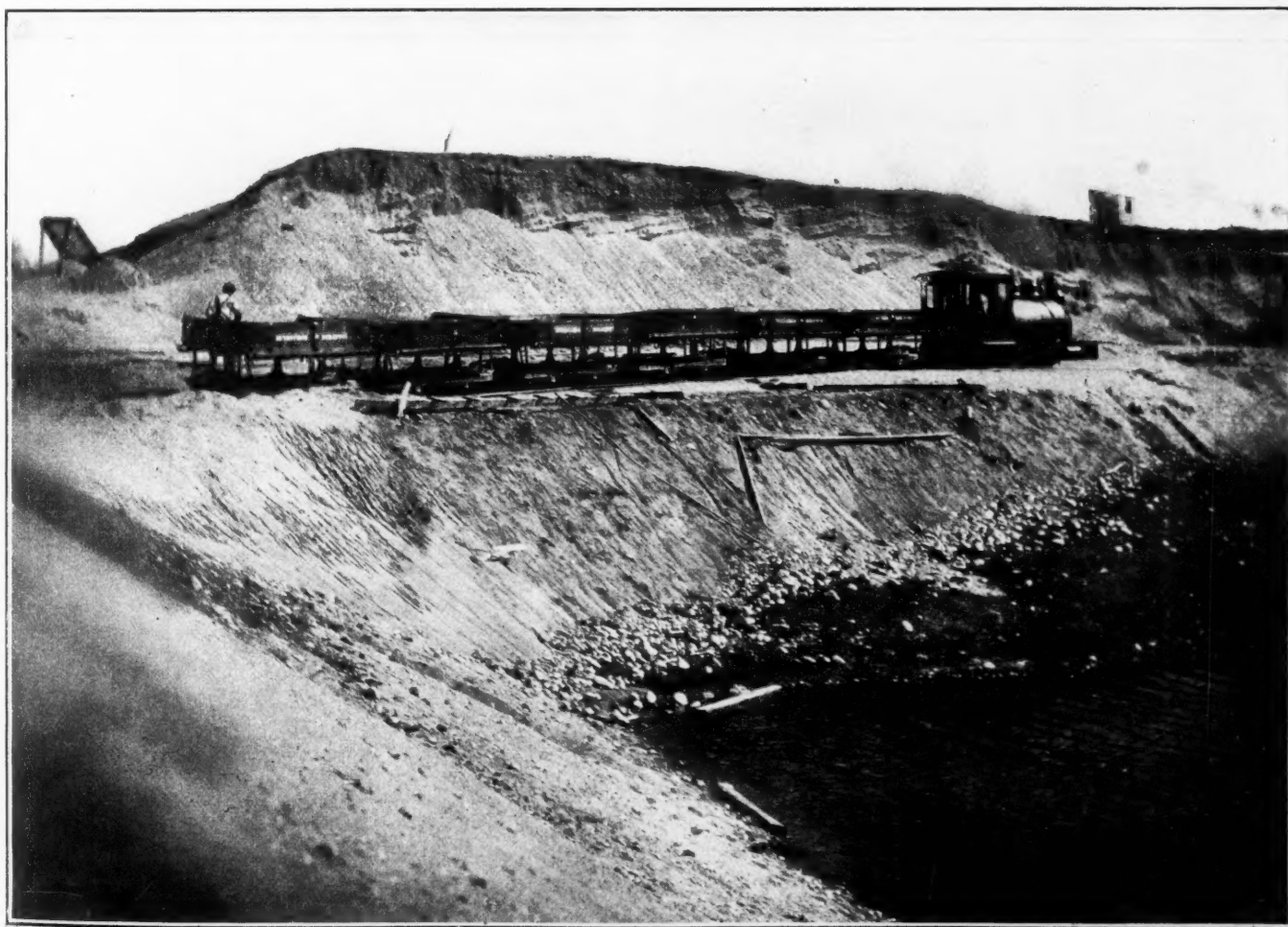
original grade. This layer varied in thickness from 6 to 14 inches, owing to the heavy scrapings which had been necessary and the settlement which had taken place. Because of the thickness of the new sand it was not thought necessary to take the precaution of mixing the new into the old by spading, as is customary. The experience of that year, however, showed that this was a serious mistake and led to clogging which might have been avoided.

Within three days of the starting of the filters the second season, they had so clogged up as to almost refuse to let the water through them, and the odor from them was so strong as to be very oppressive. This was found to be caused by asterionella. At no time after this were the conditions quite so serious, but during this and the following summers a succession of algæ made the operation very difficult. Previously the trouble in the reservoir had been thought to be due largely to anabaena, but the greatest difficulty in the operation of the filters was given by asterionella. In addition to these there were occasional epidemics of uroglena, coelosphaerium and dinobryon. The asterionella seemed to completely cement the top layer of sand so that solid chunks 6 inches square and one-half inch thick were removed and retained their shape for weeks afterward in the laboratory. It was found that the difficulty with this organism could be very largely overcome by frequent raking, the mechanical operation being very greatly benefited and the efficiency of the

filter apparently being unimpaired thereby. This was found to be fully as satisfactory as scraping off the dirty sand, and much less expensive.

Filtration during the anabaena epidemics was found to be much less difficult, although the applied water was very offensive. Counts of anabaena of over 12,000 standard units per cubic cm. were found, iron was over one part per million, carbon dioxide disappeared entirely, and the fermentation and general impurity was so great as to kill the fish in the reservoir. The filter removed all this very satisfactorily, however, the effluent containing almost no taste or odor and being much improved in all respects chemically; one-half the color, almost all the iron and a large part of the ammonia being removed. After the departure of the anabaena themselves, however, the oil and organic matter due to the death of these organisms filled the water, and were more difficult of removal; the period between cleanings was shorter and the top layer of sediment was thicker and blacker. The only remedy appeared to be frequent scrapings. The result of allowing too long a period between scrapings was a reduction in the contained oxygen; and when the effluent from a bed was found to be low in oxygen this bed was cleaned as soon as possible.

Toward the end of the second season it was found that the failure to mix with the old sand the new which had been applied that spring had resulted in serious clogging at the plane of contact of the two, and at the



SAND BANK AND EXCAVATION TRAIN, LUDLOW FILTER

close of the season all the new sand and a dirt layer on the top of the old were removed. As there was still considerably more than three feet depth of sand, which was considered sufficient, it was decided to add no new sand during the remaining two years' anticipated use of the filter if it should be possible to avoid it. This season was an unusually severe test of the filter, but it showed its ability to change a water at almost all times unfit for use into one practically without taste or odor every day of the season. The effluent was also almost colorless and entirely free from any kind of sediment.

The raking of the beds was performed as follows, the method being one which Mr. Story believed to be entirely different from that employed in other places: "After a bed has been in use for a few days it is shut off at night and left off the following morning, until it has thoroughly dried in the sun. Then the men are sent onto it with heavy, long-forked iron garden rakes, and they give the top a thorough raking. This breaks up the coating into a fine powder and opens the pores of the sand. A bed thus treated delivers as satisfactory water as a bed which has just been cleaned, and works about as well. The dirt in the water does not seem to penetrate very much deeper on account of this treatment, but it does make the scrapings somewhat heavier, and I was always careful not to use this method too frequently. During the period when anabaena was in the water I used it very little. It was extremely effective, however, during the time that asterionella was prevalent and during periods in which there were few

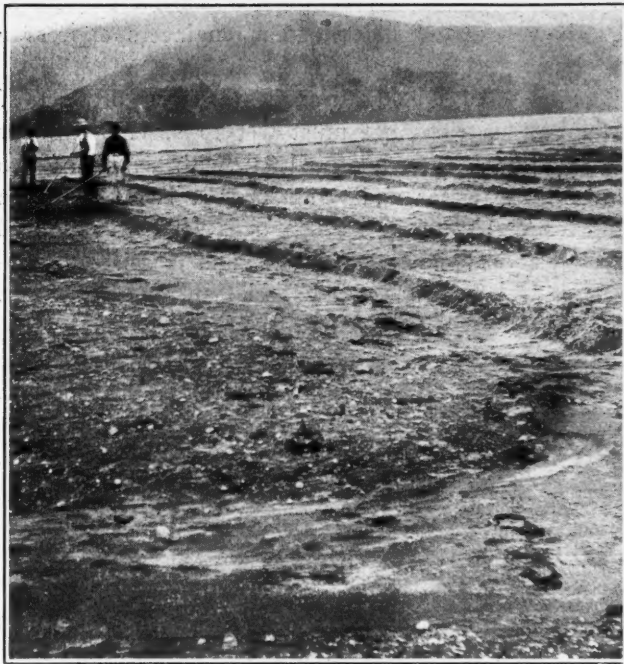
organisms in the water. I tried not to have more than one or two rakings before scraping, but during the first fall, when we had so much rain, this was not always possible. The scrapings then became very heavy and the cost of operation may have even been increased by this process.

"The process of scraping is different from that in use in other places, in that a hoe is used instead of a wide shovel. The use of a shovel was found impracticable on account of the large number of stones in the sand. A much thinner layer is removed and the work is done more easily with the hoe than with the shovel. The dirty sand is collected in long rows and is wheeled from the beds by wheelbarrows, being wasted over the bank into the reservoir. After the scraping is completed the surface of the bed is very thoroughly raked and smoothed over with heavy rakes. This raking is more thorough and much harder than that given to a bed between the period of scrapings."

"A hard rain coming on a bed which was being cleaned seemed to flood the dirt from the windrows and cover the entire surface with a very black layer; and it became necessary to scrape part of the bed the second time, as it seemed impossible to get water through without this. In addition to the re-dirtying of the bed there was also a hardening action and the top layer of sand was sometimes so hard that it was impossible to make much of an impression on it with the heel. It was so hard, in fact, that a heavy iron rake used with all of a man's strength failed utterly to break



AERATOR IN OPERATION, LUDLOW FILTER



SCRAPING LUDLOW FILTER

up the top. After one or two experiments of this kind I watched the weather pretty closely and tried not to have a bed out of service for cleaning at a time when rain seemed likely. A covered filter, of course, would have done away with most of this difficulty."

The period between rakings varied from about four days to three weeks, the ordinary run being about ten days between scrapings, with a raking in the middle of this period. If the scrapings are not made frequently enough the rate of filtration becomes less; and this was found to result not only in a diminished effluent, but also in a much poorer one, because of a larger removal of oxygen. This had previously been learned by the Board of Health experiments, and was confirmed by actual experience during operation.

The cost per million gallons of operating the filters during the three years is somewhat uncertain because of the lack of means for measuring the consumption. However, estimates have been made, perhaps the most reliable being obtained by noting the loss from the clear water basin when the filter was shut down for twenty-four hours. Figures thus obtained indicate an average cost of \$5.73 per million gallons of water delivered, exclusive of interest and depreciation. It might be thought proper to assume a life of only four years for the plant, in which case the interest and depreciation would amount to about \$14,000 a year, which would probably bring the total cost per million gallons to approximately \$10. There is little question, however, but that, whatever the cost, the decision to install a temporary filter was a wise one, and the results obtained are exceedingly creditable.

Mr. Allen Hazen, of the firm of Hazen & Whipple, was the consulting engineer for both the filters and the new Little River project. Mr. E. E. Lochridge is Chief Engineer of the Springfield Water Department, and Mr. Carroll F. Story is Assistant Engineer in Charge of the Ludlow filters.

OILED MACADAM IN CALIFORNIA

Supplanting Oiled Dirt Roads in That State, and Even Asphalt—Method of Construction—Characteristics of Materials Used—Cost of Construction

By E. H. KELLOGG, Asst. City Engineer, San Bernardino, Cal.

IMPROVEMENT of public highways in California has been forced by the demands of the fruit growers who cannot move their products over rough roads, by the enormous and growing use of the automobile, and, above all else, by the awakened pride of all citizens of the State, especially of the south, who are to a greater or lesser degree show people, with the tourist world for audience. During the last decade engineers and municipal and county governments have been constantly experimenting with available materials, and improving methods. The dust-laying qualities of native asphaltic oil have quite naturally kept this factor as a practical constituent in nearly all types of pavement. In the beginning it was discovered that leaking oil wagons on roads about the wells were making them dustless and mudless, and from this came the oiled road—a veritable boon to the traveling public. But with increasing traffic the upkeep of the common oiled road became more and more of a burden; the cause of its weakness was easily found in the unprepared foundation, and lack of wearing surface. These are now supplied by leveling and rolling the base and covering it with two or more layers of gravel each sprinkled with oil and traveled down.

But even this suffers under heavy traffic and the oiled macadam is being substituted wherever possible. In many of the cities it is taking the place of asphalt pavement, with concrete base, and when well made presents an almost identical appearance, but is notably more elastic, and affords better footing for hoof and wheel. While perfectly smooth of surface it lacks the "slickness" of asphalt, from which dust is readily lifted by the wind, and which, when wet, becomes slippery. It is quite as noiseless as asphalt. Made impervious to water, the foundation is perfectly protected from softening by moisture. A properly crowned road is immediately drained and a heavy rain serves only to wash the pavement. It is not difficult to repair, and, if proper care is given it during its first year or two, its subsequent upkeep cost may be counted at almost nil. With so much in its favor, it hardly needs the additional feature of cheapness to insure its popularity.

The method of construction for roads or streets subject to heavy travel is briefly as follows: After the street has been brought to sub-grade, generally seven inches below finished surface, the whole is saturated with water to settle weak spots. When nearly dry it is rolled with a steam roller, leveled up with grader, and again rolled until as hard as earth can be made. A layer of crushed rock between the sizes of one and one-half and three inches is spread thick enough to make four and one-half inches when fully compressed. It is then rolled dry until the stones cease to creep

under the roller. Crusher screenings, limestone preferred, are spread, raked and swept into the voids, and generously watered. By this means the base course is solidified almost to the hardness of concrete. The surface now presents regular planes, but in detail is quite rough, a desirable feature as facilitating the bonding thereon of the second course.

The second course, which compresses to two and one-half inches, is composed of rock crushed to sizes between three-eighths and one and one-half inches. It is spread and rolled dry, the voids filled with screenings and the mass saturated with water. During the rolling, brushes and rakes are constantly used to secure a perfect surface. It is now allowed to dry out to the depth of about an inch and oil at the rate of one gallon per square yard is evenly applied, and covered with a thin coat of crusher screenings from hard rock. It is then left for twenty-four hours or more, during which the oil penetrates the top course, and a certain proportion of the volatile oils escape. A second application of oil at the rate of one-half gallon per square yard is then spread and covered with screenings, and rolled to a finish. The roller is constantly followed by dressers with rakes and brooms, to cover visible spots of oil and to insure perfection of surface. Much depends on the thoroughness of the rolling. Ten or twelve-ton machines are used and are driven diagonally from side to side, the diagonals being reversed in the second rolling. The finish is usually given by the longitudinal drive. There will remain some of the last spread of screenings, which are left to be shifted about by the traffic until every particle of free oil has been absorbed. After the final rolling the street is at once opened to travel and the more travel the better the street, provided the heavily loaded wagons are prevented from "trailing."

It has been demonstrated that half the battle has been won when the foundation has been perfected, for with no yielding spots in the base a much thinner pavement will serve effectively, and, with the oiled surface to protect this base from seepage, we nearly approach the ideal in road making.

For streets carrying only moderately heavy travel a thickness of five inches has been found most satisfactory. In residence districts a strip of macadam say twenty-four feet wide in the center of the street is supplemented with "surface oiling" of the remainder of the street. The cost is thus much reduced and efficient service is secured. On country roads, a central strip of sixteen feet is laid with macadam and eight feet of surface oiling on each side.

The cost of this pavement varies with the cost of material, being from nine to twelve cents per square foot seven inches thick, or seven to ten cents if five inches thick. Rock must meet a seventy per cent rattle test, especially that for the wearing surface. Good limestone gives good results in the base course; limestone screenings for filler are preferred, as with water they more readily fill the voids, and the dust forms a highly cementitious paste of excellent bonding char-

acter. Good work is possible with hard rock screenings, however, and indeed some engineers express a preference for them.

The oil used is a natural, unprocessed product of certain oil districts. It must test to seventy-five per cent or eighty per cent asphaltum, with a limit of two per cent for water and sediment. It is applied at a temperature of one hundred and fifty to two hundred degrees, at which it flows readily and is easily distributed by wagons fitted with special sprinkling devices.

The little city of Riverside, which lays claim to being the pioneer in this line, has eleven miles of oiled macadam pavement, and is constantly extending its use. Redlands, our pet show town of about 10,000 people, boasts of fourteen and one-half miles; San Bernardino, a strictly commercial city of 16,000 people, is beginning work on eight miles; Hollywood, a very much alive suburb of Los Angeles, is busy with the construction of several miles.

The county of Los Angeles has begun construction of a system of country roads to be oiled macadam throughout. This will cost, with its bridges and culverts, \$3,500,000.

The city of Los Angeles, the most enterprising city in the United States, is the trial ground for everything new in pavements, and among them shows some fine examples of oiled macadam.

The Engineers and Street Superintendents, backed by enterprising city and county governments, are enthusiastic in the development of scientific road building. They keep in constant touch, and every new discovery which points to better results is promptly passed around. In this way we hope to improve the quality of our work and reduce its cost.

The writer may be pardoned for indulging in expressions of pride in the progressiveness of the many small cities of Southern California. Almost without exception they have evinced their civic pride by paving their streets, laying cement walks, with generous parking in which flowers bloom almost the year through, and planting the many beautiful shade trees which thrive in this favored climate. Every town, however small, has its water, gas and electric supplies, and is well sewered and wholesome. As a matter of principle we bond ourselves to the limit to secure these improvements, which we propose to enjoy while we can and leave our successors, who in their turn will reap their share of benefit from our aggressive action, to pay their share of the cost.

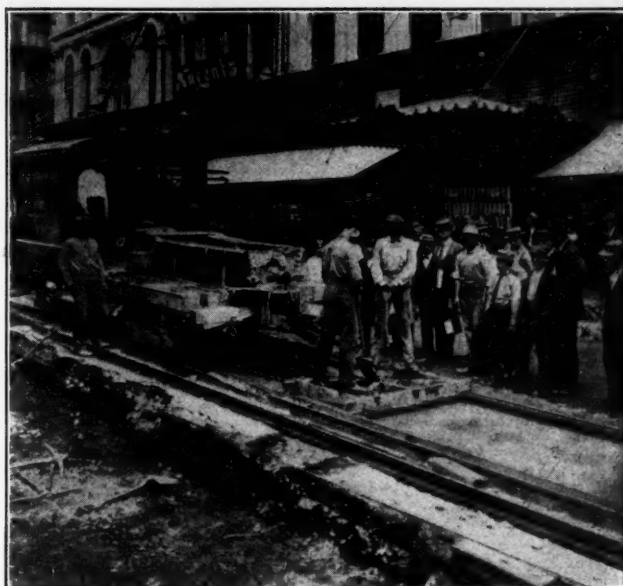
NO REHEARING ON RATE REDUCTION SUITS

WITHIN the past week the U. S. Supreme Court has denied the application of the Knoxville Water Company for a rehearing in the rate case. In our issue of January 20, we presented at some length an abstract of the decisions of the Supreme Court in this case, and in that involving the gas rates in New York City. The New York Consolidated Gas Company also applied for a rehearing, but this was denied some weeks ago.

WOOD BLOCK PAVING BETWEEN RAILS

Concrete and Grout Mixed on and Distributed by Trolley
Car Made From an Old Mail Car—Blocks Laid
in Pitch Directly on Foundation

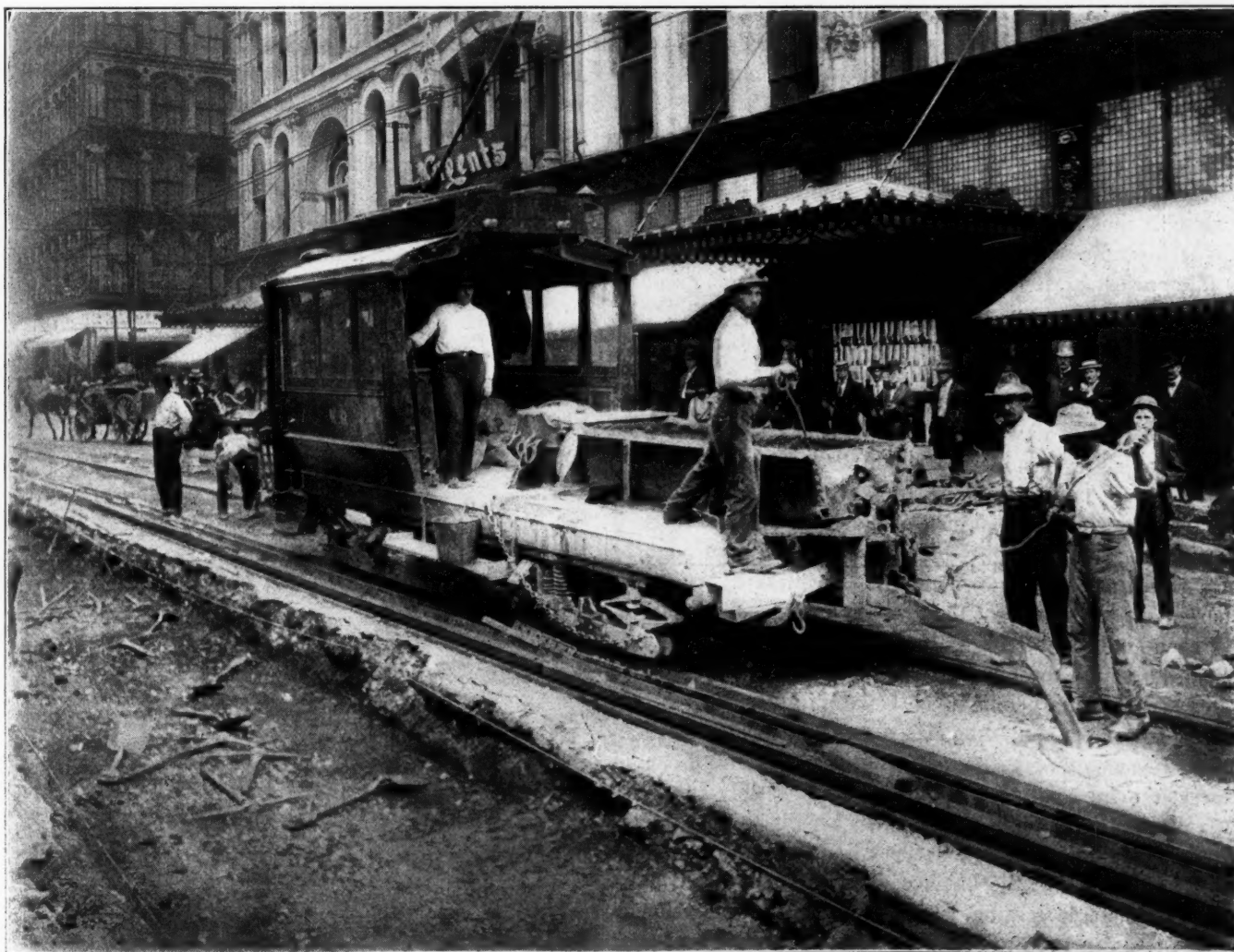
THE United Railways Company of St. Louis, in laying creosoted wood blocks between the rails of their track in Broadway avenue, used some special appliances and methods which are clearly shown in the illustrations. The concrete mixing machine, carried on a trolley dummy car, mixed both concrete and the surfacing cement, and carried the materials in the forward end. The cement grout shown flowing from the mixer was used to level off the concrete surface, as the wood blocks were set directly upon this without a sand cushion. Before the cement had set it was smoothed off by a drag drawn by the dummy car. This drag rested on the tops of the rails, thus insuring an absolutely uniform depth below the same, which was made such that the wood blocks would come flush with the top edge of the rail. When the cement had fully set the blocks were laid in Barrett paving pitch. The pitch was poured onto the concrete, then each block was dipped, both on the side and end, before setting in position, thus insuring that all sides of it are coated. The joints were not made



LEVELING OFF CONCRETE FOUNDATION

absolutely tight, however, but were filled with pitch poured from a special can with a very narrow nozzle.

The car used was an old mail car from which half the body had been removed. The mixer consisted of a trough in which paddles, originally designed for a Drake concrete mixer, were revolved by a G.E.-800 kw.



POURING CEMENT FOR FOUNDATION



SETTING CREOSOTED WOOD BLOCKS

motor. The paddles were fixed to revolve against each other, thus stirring up the material without moving it forward. When mixing grout they were kept moving continuously so that the sand did not settle out.

A SMALL MUNICIPAL LIGHTING PLANT

THE 1908 report of the municipal electric light plant of New Athens, Ill., has recently been received, and a comparison with the statement for the two previous years shows an apparent increase in economical working. This plant has been in operation for about five years, during the last four of which it has been under the present management.

The total cost of the plant was \$11,500, on which interest is paid at 5 per cent. The machinery is of modern type and both it and the line are well constructed. The plant is now furnishing power for about 1,250 16-candle-power incandescent lights and 30 2,000-candle-power arc lights. The latter are used for street lighting and burn on an "all night and every night" schedule. The incandescents also are allowed to be used all night, power being turned on in winter at about 4 P. M. and turned off at 8 A. M., and in summer the hours are from 7 P. M. to 5 A. M.

The rates for incandescent lighting for residences is 25 cents per lamp per hour for the first four lights, and 15 cents for each additional light. It is, therefore, possible to have ten lights burning every night through in a residence for \$1.90 a month. Business lights are charged 35 cents each for the first ten lights and 20 cents for each additional light, with special discounts in a few instances where the business houses close early. Office rates are 25 cents per light, with unlimited service.

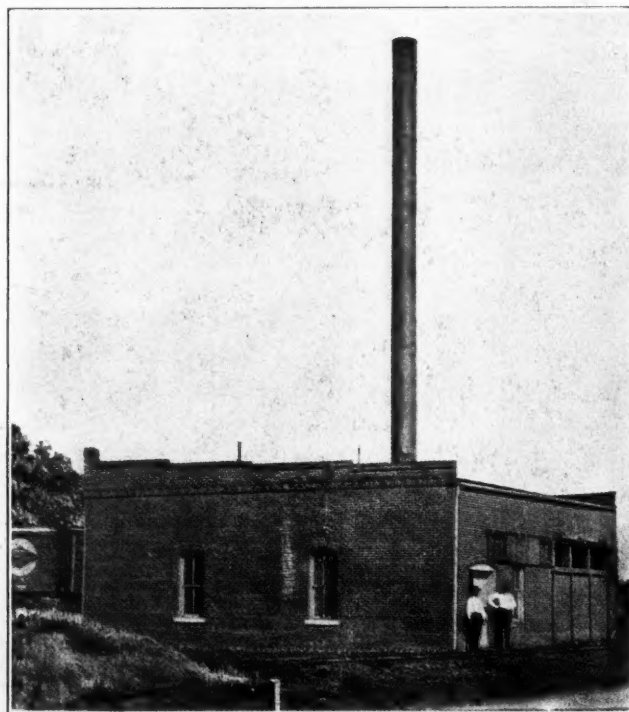
The accompanying financial statement includes, besides the actual operating expenditures, insurance, interest and depreciation. Lost taxes and possibly one or two other items might be included, but these probably would not modify the results very considerably. From this it appears that the balance, which is considered as the cost of street lighting, has been gradually decreasing from \$1,545 in 1906 to \$1,237 in 1908. No statement is made as to whether the number of street lights has

remained the same, but it does not seem probable that these would decrease in number, and they probably have increased. The thirty lights last year, according to the figures given, cost \$41.25 each.

Financial Statement, Municipal Lighting Plant, New Athens, Ill.

For the Year Ending Nov. 1	1908	1907	1906
<i>Expenditures:</i>			
Freight.....	\$14.86	\$12.53	\$10.28
Fuel, including freight....	950.30	975.19	1,366.67
Salary.....	1,359.00	1,320.00	1,328.70
Expense, repair and miscellaneous.....	35.58	16.69	28.02
Supplies.....	403.58	392.50	97.84
Poles.....	84.90		
Oil, waste and packing....	119.82	93.90	61.76
Insurance.....	118.70	152.50	52.20
Interest on money invested, at 5 per cent.....	575.00	575.00	575.00
Depreciation at 5 per cent..	575.00	575.00	575.00
	\$4,236.74	\$4,116.31	\$4,095.47
<i>Receipts:</i>			
Collections.....	\$2,748.30	\$2,713.90	\$2,550.70
<i>Credits:</i>			
Unexpired insurance.....	33.25	66.50	
Line extensions and new transformers, estimated..	156.40	60.00	
Supplies on hand.....	61.43		
<i>Balance:</i>			
Cost of street lighting.....	1,237.36	1,275.91	1,544.77
	\$4,236.74	\$4,116.31	\$4,095.47

One interesting fact shown by the statement is that, although the receipts from commercial lighting increased nearly 10 per cent between 1906 and 1908, the fuel bill decreased about 30 per cent; certainly an indication of increased economy in the plant. On the other hand, the expenditures for electrical supplies has increased greatly, which is probably accounted for by renewals of lamps, extension of business and other changes looking to increased efficiency and economy.



MUNICIPAL POWER PLANT, NEW ATHENS, ILL.

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MARCH 17, 1909.

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Special Methods of Water Purification

THE article in this issue describing the operation of the Ludlow filters at Springfield illustrates forcibly the necessity of adapting methods to conditions in plants of this kind. Filtration methods which have given excellent results elsewhere were found by experimental plants to be absolutely ineffective here. But remarkably good results were obtained when a plan was adopted based upon a scientific study of the peculiar conditions governing the case. Even this did not end the necessity for expert study, however, for as different forms of algæ succeeded each other in the water, different treatments of the beds were found necessary. Moreover, the very

success of this plant argues against the adoption of this method for treating other waters without a special study of all the affecting conditions. But it does demonstrate the feasibility of purifying almost any water; and it explains how certain conditions can be dealt with satisfactorily. A few years ago sedimentation and sand filtration were practically the only methods considered for purifying city water supplies. Mechanical filters, coagulants for hastening sedimentation, aeration, intermittent filtration, softening and treatment with ozone are now among the methods adopted for dealing with special conditions; and it is probable that still others will be developed as the needs demand.

The Result of Municipal Ownership

ALTHOUGH St. Louis has recently decided to abandon for the present the idea of a municipal electric lighting plant, this is by no means to be considered a proof of the undesirability of municipal ownership. The abandoning of the idea was due to the fact that the local company offered new rates a little more than one-half as high as those previously in force, and this reduction should be placed largely to the credit of the small municipal plant already in service, and described in our issue of Feb. 19, 1908, reinforced by the active agitation for the construction of a complete municipal street lighting plant. Altogether, we believe that the outcome has been even better for St. Louis than if she had constructed the municipal plant, or than if she had never established the small plant, which demonstrated the possibility of cheaper lighting.

Asphalt Paving in Mexico

THE City of Mexico has contracted for asphalt paving on a number of streets and work has already been carried forward so vigorously that it is expected to have about 30 blocks of this pavement completed before the middle of May. In paving these streets the city is using a thinner coat of asphalt than is customary, as it is claimed to have been found that a thin coat would be sufficient for the light traffic of these streets, although it would not withstand the heavier traffic in the central part of the city. The telegraph and telephone poles are being replaced before the construction of the pavement, and the authorities will prohibit the removing or setting of any poles for one year after the completion of the pavement adjacent to them.

Denver's Official Weekly

WE are glad to welcome among our exchanges the official weekly publication of the city of Denver, "Denver Municipal Facts." The second number consists of sixteen pages, well but not too profusely illustrated. These contain descriptions of the lighting system, of a new viaduct, the park pumping system, etc., besides short articles from several officials describing the work of their departments, and general information concerning municipal matters. It is in every way a creditable publication.

DISCUSSIONS, QUESTIONS AND ANSWERS

Readers of the Municipal Journal and Engineer are invited to send for publication in this department inquiries concerning such matters as can probably be answered from the personal experiences of others, or from information on file in this office. Any who can furnish the desired information are requested to do so, in addition to any reply which may be given by us. It is especially desired that an exchange of opinions and discussions on mooted subjects find place here. We will welcome any opinions, whether or not we agree with them; requesting, however, the omission of all personalities.

CONCRETE STREET PAVEMENTS

MUNICIPAL JOURNAL AND ENGINEER,

New York City.

GENTLEMEN: The writer is interested in the construction of concrete street paving, and wishes to learn as much as possible through your valued medium regarding this class of street paving, from the bottom to the finish, giving an idea of each process and the grade of materials used.

I should also like to have a short list of contractors who have had experience in the making of this kind of paving and who are making a specialty in this line.

I should like to know the successes, also the failures of this type. Is it noisy? Is it slippery in wet or frosty weather? Is it easy to make repairs where large cracks appear? And why are not the climatic conditions here favorable to that style of street paving, when the sidewalks so constructed are so durable?

Possibly you could put us into communication with contractors in this line. There is to be considerable paving done in this city this season, and possibly they may be able to get remunerative jobs here.

Yours very truly,

AURORA, ILL.

A. W.

Most of these questions are answered in articles which have appeared in our columns from time to time, such as "Concrete Paving in Bozeman," March 10; "Paving in Knoxville," March 3; "Concrete Paving in Salt Lake City," January 27. Two styles of concrete pavement, the Hassam and the Blome, are laid under patents. We believe that, so far, most concrete pavements have proved very satisfactory. They need not be slippery if properly finished on the surface. We will be glad to forward to the writer of the above any letters from interested parties or any answers to the questions asked.

THE COLLECTION AND DISPOSAL OF MUNICIPAL WASTE

As Col. Morse's book bearing this title was published by us, we have refrained from personally reviewing the same. We feel justified, however, in printing the following letter, which was sent us without any solicitation on our part:

MUNICIPAL JOURNAL AND ENGINEER,

New York City.

GENTLEMEN:

You have done a service to the continent in the publication of Col. Wm. F. Morse's book on "The Collection and Disposal of Municipal Waste."

This is a critical period in the progress of municipal sanitary betterment, at least in the United States. Our municipal officers, with few exceptions, are sincerely desirous of doing their duty by those who have entrusted them with place and power; but how can it be expected that business men can have information of a subject still young in all the world, and on which only their best informed engineers can furnish good advice and occasionally expert knowledge.

The trouble has been that, in this country, very few engineers have been consulted or have given the subject serious study. There have been a few investigations and reports by intelligent and discriminating committees, but they have been mostly descriptive and critical with no suggestion of method or means by which improvement could be made. The literature of the subject was almost nothing until a couple of years ago. But the time has come for constructive work, based on the history of what has been tried and failed, the particular points of failure, and such a knowledge of the reasons as will enable trained men

to devise and build efficient and enduring works. It was a history that was most needed.

And now, when not another man could tell from personal knowledge the crematory story of the past twenty years, along comes Morse who has built more crematories of more kinds than any other man alive; who began with the days when a furnace lasted one year, and improved the construction until he built furnaces which have now been operating at full capacity for fifteen years with only one relining of fire brick; who, twenty years ago, was building the original low-temperature furnace and, seeing its fault, increased its temperature until at the World's Fair in Chicago he was able to burn all the garbage and sewage sludge of the daily multitude, with such freedom from smoke and smell that nobody knew the plant was on the grounds; and who now has furnaces at work in the hospitals, best hotels, department stores and railroad stations of New York City—along comes Morse with a description and history of every waste-destroying plant built in America since 1885.

The whole story is evidently from personal knowledge, and that is its value. It is a unique book. I do not think it could be duplicated. It describes each American crematory and its work, from the beginning to the present year; it points out their similarities and differences with exactness and great detail; it shows the successive improvements made in the design and construction of each kind of furnace; and why one kind became extinct, while with another style, an individual failed, only to be replaced by a better one of the same kind. It leads up logically, through successive instances, to the present knowledge that high temperature, and high temperature alone, is the cure for smoke and smell. It describes the modern furnace of this kind—the destructor—so that any one can read and understand.

Then there is a history of "garbage reduction" methods and plants; and though the "crematory" man and the "reduction" man have always been at war, Col. Morse in this book has lived up to the best traditions of the author's trade and has written the story of "reduction" with clearness and fairness. He says "the treatment of separated garbage for recovery of the commercially valuable constituents has now become a stable and accepted fact in American disposal work in the larger cities," and that is all that the "reduction" man claims. He shows, too, how a town should go to work to get a waste-disposal plant. Let the engineer decide the kind of plant best suited to the place; after it is in operation, let the Board of Health pass on its sanitary qualities; then let the Board of Aldermen pay for it, or stand by the local officers in refusing to pay for a plant which does not fulfill the contract.

The story includes much of the information gathered and made public during the past two years by Mayor McClellan's committee which studied the subject for New York City; the report by Mr. J. T. Fetherston, Superintendent of Street Cleaning in Staten Island, N. Y., whose investigations on the fuel value of mixed waste are considered by all engineers the best and most thorough ever made; the classic report of Col. George E. Waring on the methods and possibilities of the reduction process, and several papers by specialists on methods of collection and utilization of waste.

True, the book has faults, but these can be corrected in the second edition. One is a lack of condensation and arrangement, due partly to its great scope, and partly perhaps to its original serial publication, and another is the number of typographical errors. But, notwithstanding its faults, it is a great book, of easy, graceful, readable style, containing for the engineer a detailed history which no one else could have furnished, and for the non-technical man an illustrated description of apparatus which is very clear. You have done a service to the country.

NEW YORK, February 24, 1909.

C. HERSCHEL KOYL.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Patrol to Keep Roads Good

Albany, N. Y.—The new State Highway Commission has announced that it expects to adopt the patrol system for the maintenance of the state and county highways heretofore improved by State aid. This will involve the maintenance of a force of some 180 patrolmen, each with a horse and cart and each assigned to look after the repair of ten miles of road. This system involves an expense of \$60 a year per mile of road to be repaired. It has been successfully followed out in keeping in condition improved highways in Massachusetts and in certain foreign countries, and under the system the roads are kept in such a state of efficiency that much in the way of expensive repair work is avoided. The commission has also voted to establish immediately a Bureau of Research, for the purpose of investigating the various methods of construction in vogue in neighboring States, and for conducting experiments with a view to ascertaining the best form of construction which will be adapted to the present conditions, having in mind especially the great damage caused by automobile traffic.

Fines Paving Company \$560

Dallas, Tex.—For the month of February the City Engineer has recommended the assessing of a fine of \$5 a day for 112 days against the Barber Asphalt Paving Company for failure to comply with the city's instructions for paving repair on Main, Elm, Lamar and McKinney streets. Commissioner Doran in reporting with approval of Engineer's suggestion, said: "The apparent policy of this paving company to abandon the various streets they contracted to maintain makes it proper that the Board take summary action."

Paving Men Break National Record

El Paso, Tex.—The Texas Bitulithic Company has completed the paving of Montana street from Cotton avenue to Florence street, a distance of thirteen blocks. In the thirteen blocks completed there are 28,200 square yards of paving and it has been laid in 22 days. This in itself is a pretty good record, but the local Bitulithic men claim they have a national record on this street. In twelve days' work on Montana street they laid completed a total of 17,000 square yards of pavement, a record equaled by no Warren Brothers' Company in the United States. They state also that the check of \$21,000 paid them was the largest two weeks' check any of the Bitulithic Companies ever received. In the entire street there will be 45,000 square yards of pavement, or only a little less than half the entire amount laid on paving district No. 1 in the business section last year.

Newark's Paving Record

Newark, N. J.—Nearly as much paving was done in Newark in the last decade as in the entire 46 years previous. Ninety-one miles of streets were improved in this manner during those 10 years, and at a cost of \$4,311,302.73. In 1898, one of the big years for city improvements, 11.68 miles of streets were paved, which meant an additional expenditure of \$466,644.73. Last year was the banner year on the city records. The cost of paving work in 1908 was \$716,513.19, and the mileage was 13.3. Granite block covers 56.229 miles of Newark streets. The other types of pavements in use are as follows: Sheet asphalt, 51.253 miles; brick, 30.349 miles; telford, 30.305 miles; Belgian block, 11.539 miles; bitulithic, 6.787 miles; cobble, 6.41 miles; bituminous concrete, 0.886 miles; macadam, 0.125 miles, and wood block, 0.075 miles. There are 86 miles of unimproved streets.

Big Viaduct Open on Long Island

Long Island City, N. Y.—In the presence of officials of the Borough of Queens and of the Long Island Railroad, the Thompson avenue viaduct in Long Island City was formally opened March 3. The viaduct, which cost half a million dollars and was built wholly at the expense of the railroad, runs from Jackson avenue across the Long Island Railroad yards almost to the Queens County Court House. The first vehicle to cross was an automobile, the property of the Department of Highways. Hardly had the machine with some of the borough officials crossed, when an ambulance was seen coming at full speed. The driver was motioned to cross, and the second vehicle to cross tore over the structure. The ambulance had been called from St. John's Hospital and the short cut which the viaduct gave it was instrumental in saving the life of a baby.

Twenty-five-mile Street for Los Angeles

Los Angeles, Cal.—Among the projects for this year, the paved highway from city to sea occupies a prominent place. It will be the connecting link between the harbor and the business establishments of Los Angeles. It will be constructed to accommodate the enormous traffic that will find outlet and inlet at the free harbor soon to be included in consolidated Los Angeles. Commercial men say it will not be long before the paved highway, 25 miles long, will be dotted with warehouses, stores and homes.

Snelling Avenue to Be 100 Feet Wide

St. Paul, Minn.—Considerable discussion was precipitated at the meeting of the Assembly Committee on Streets, when the subject of widening Snelling avenue, from Randolph street to Magoffin street, to 100 feet came up. The standard width of Snelling avenue is 100 feet, and it was proposed to extend this width throughout. It developed at the meeting that by making the avenue 100 feet wide some property owners would have to have their homes moved back several feet and would sustain other damages. The majority of property owners were in favor of 100 feet, and intimated that they would be willing to compensate whatever damage is incurred by the widening of the street. With the understanding that the Board of Public Works will make proper provision, the committee returned a favorable report, amending the order to read 100 feet instead of eighty, thus restoring it to its form when introduced.

Adopts Policy to Enforce Maintenance Contract

Seattle, Wash.—The Board of Public Works has adopted a new policy towards contractors who have failed to maintain pavements that are under guarantee, in proper condition. No new work will be awarded to a contractor who has defaulted in his maintenance contract. In accordance with this policy the Board recently refused to award a contract to a firm of contractors, and ordered the City Engineer to repair the street that was in bad order and sue the contractor for the cost, if necessary.

Constructing Oiled Roads

South Pasadena, Cal.—One of the most important ordinances ever introduced by the City Trustees has been prepared by City Attorney Carson. It is in regard to preparing specifications for the oil tamping of the city streets, and opening the way for a more permanent improvement of the city's thoroughfares. Street Superintendent Pierce is improving Oak street by a new oil tamping process which is said to be superior to macadam, and as far as results are concerned, has proven to be fully as satisfactory as asphalt pavement, and much less expensive.

Lays Over Fifty Miles of Walks

Cleveland, O.—Nearly fifty-four and a half miles of sidewalks were laid, relaid or repaired in Cleveland during the year 1908. The exact mileage, 54.478, is shown in the annual report of Superintendent Bradbury of the Sidewalk Department. The work, done under city contract, covers 26.057 miles, and under private contract the amount of territory covered was 28.421 miles. Approximately 1,180 complaints were registered and investigated; 3,474 permits were issued and 520 orders were issued to the delinquent contractors. These orders covered work in about 370 streets.

Will Pave Roadway to Bay View Park

Toledo, O.—Few plans for public improvement have met with more hearty endorsement than that put forward by the Municipal Committee of the Chamber of Commerce, having as its object the paving of that portion of Summit avenue from Michigan street, where the paving now ends, to Bay View park, that magnificent 228 acres facing Maumee river and the bay. The paving material considered is brick, 36 feet wide, costing \$4 a front foot. Some of the property is not valuable enough to stand the cost of a roadway 48 feet wide, like that portion of the street nearer the center of the city.

SEWERAGE AND SANITATION State May Build Disposal Plant

Allentown, Pa.—It is up to the County to do something to relieve the unsanitary conditions existing at the County Home, near Wescoesville, ever since it was built. The State Department of Health has notified the steward that there is to be no more dumping of sewage, garbage or waste on the property or in Cedar Creek, which flows through it. If nothing is done within the next thirty days the State will take hold of it and charge the expense up against the County.

Advises Sewage Disposal Rather Than Water Filtration

Laconia, N. H.—The State Board of Health has written to the special committee appointed to consider questions of sewerage and water supply to the effect that it does not approve of the plan proposed for Laconia to purchase the local water company, install a filtration plant and continue to discharge sewage into Lake Paugus, from which the water supply is taken. The Board says it is an irrational, illogical and unscientific procedure to pollute the water supply of a city and then establish a filtration plant. This is especially the case when, as in this instance, the cost of removing the source of pollution will not much exceed the cost of filtration. Moreover, the health of present and future residents, cottagers and campers upon the shores of the lake must be considered.

Has Confidence in Own Methods

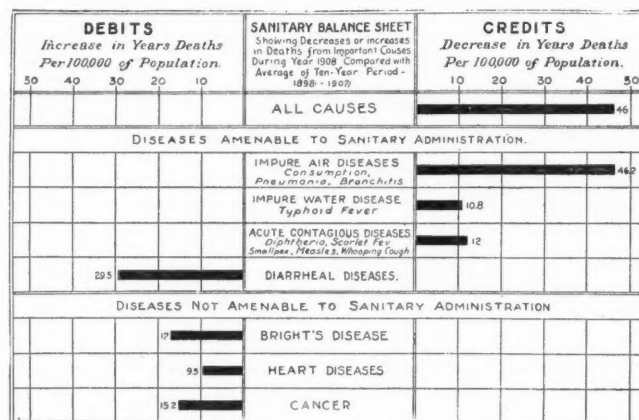
Newark, N. J.—Following its refusal to join with neighboring municipalities in an anti-tuberculous campaign and the establishment of a sanitarium for advanced cases, the Board of Health of Newark has issued a statement defining its position in regard to the warfare on tuberculosis, reviewing the work which it has accomplished in recent years, and announcing that it prefers to follow its own lines of work. The statement says that tuberculosis is an infectious disease, communicable under some conditions, but not contagious. The Newark Board was the first in the country to make, and offer free of charge, a tuberculosis serum and also a sepsis serum. As regards forced reporting, under the voluntary system prevailing, 85 per cent of cases are secured, the same percentage as in New York under the compulsory system. Under the prevailing system, deaths from tuberculosis have been decreased from 3.33 in 1885, to 2.60 in 1908. In general, it is stated that the stamping out of the disease is largely an economic one, in which overcrowding and unsanitary conditions among the lower classes are important factors.

City Milk and Meat Plants

Cincinnati, O.—Milk Inspector Hagen says the regulation of the milk supply of Cincinnati is so arduous, and to insure a pure supply would necessitate the employment of so many men, at a large outlay of money each year, that it will eventually come to a point where the milk supply will have to be taken in hand by the city and run as a municipal enterprise, as is done in some of the cities of Europe. He also said he believed the solution of the good meat problem lies only in a municipal abattoir.

Chicago Health Record for 1908

Chicago, Ill.—The Department of Health of Chicago issues a bulletin devoted to the dissemination of and advice and information regarding the work of the department. In their annual summary for the year 1908, compared with the year 1907, the debits and credits are set forth in graphic form, as shown in the accompanying balance sheet. There has been a satisfactory decrease in the death rate of preventable diseases, particularly those due to bad air. The statement is made that the per capita cost of preventing disease and death is ridiculously small as compared with the cost of the prevention of crime or the preservation of property from fire. The year 1908 is recorded as the fourth lowest in the city's history—14.10 per 1,000.



Police to Round Up All Spitters

Columbus, O.—In accordance with an order received from Mayor Charles A. Bond, Chief of Police John O'Connor has instructed the patrolmen to strictly enforce the ordinance prohibiting spitting on sidewalks, in street cars, in public buildings, etc. The passage of this ordinance was secured by the Board of Health and the attention of the Mayor has been called to the numerous violations. The ordinance provides for a fine and the police are instructed to make arrests.

Sue City For River Pollution

Princeton, Ind.—That lack of a sewerage system, and neglect in taking steps to provide one, is likely to cost the city of Princeton a fortune is indicated by a suit filed for \$2,000 by Robert Herriot, who lives near an open creek running through the city into which the sewage from perhaps a hundred drains is poured. Among the numerous houses, public and private, which drain into this branch, is the city building, and each of the other drains has been constructed by permission of the City Council. Herriot and others, among them some of the owners of the city's best residences—the branch being in the heart of the city—have been waiting patiently for some active steps to be taken toward a sanitary sewer system.

Sewage Disposal Problem in Rochester

Rochester, N. Y.—The question of sewage disposal has been taken up, first in a message from Mayor H. H. Edgerton, then in a communication from City Engineer Fisher, containing a report from Emil Kuichling, consulting engineer. The problem under consideration is the purification of the rivers by carrying the sewage to Lake Ontario and discharging it at a depth of 45 feet.

WATER SUPPLY**Imports Trees to Reforest Watersheds**

Bridgeport, Conn.—A consignment of 20,000 white pine trees will arrive in this city from Holland the latter part of next month, for the Bridgeport Hydraulic Company, to be used in the execution of an elaborate plan for the growth of pine forests upon the watershed of the company in Bridgeport, Stratford, Fairfield, Easton, Monroe and other towns. The company has established a forestry department and has engaged the services of Frank C. Schleichert to act as forester. The intention is to utilize the fertile farm lands acquired by the company for the protection of its watershed for the double purpose of improving conditions and to grow white pine trees, which, in about 30 years will be valuable for timber, the present market price being \$60 per thousand feet. The duty on the trees is so high that it greatly increased the cost of importing them and arrangements have been made for the establishment of a nursery to cover an acre of ground, and there will be planted the 20,000 trees expected from Holland next month. From these plantings the seedlings will be obtained and the trees will be grown for transplanting. The company now has 4,000 acres of land which in time will be entirely covered with white pine trees.

Jersey City Resolves to Purchase Water Works

Jersey City, N. J.—After many years of delay, the city has authorized the consummation of the purchase of the water plant at Boonton, the Street and Water Board and Board of Finance having adopted resolutions that empowered a bond issue to pay for the plant. The issue of bonds by the Mayor and Aldermen to pay for the plant is authorized by the resolutions. The contract price is \$7,595,000. The city claims in the pending litigation that deductions must be made from the sum for failure to properly perform the contract for the construction of the water plant. The Court of Chancery has already made some deductions from the contract price, but the question of the largest claim, that for the prevention of pollution of the Rockaway River by the sewage of the towns of Dover, Boonton, etc., has not been decided by the court. It is proposed by the city to issue bonds for the full amount of the contract, sell the same and pay the proceeds into the Court of Chancery. When the purchase price is determined by the court, that sum will be paid to the Jersey City Water Supply Company by order of the court and the balance returned to the city.

Lake Michigan Water Impure Now

Michigan City, Ind.—Professor J. M. Brewster, of the State chemist's office, in an address before a medical association, stated that the day was not far distant when inland cities will be compelled to secure their water supply from Lake Michigan. This will make the question of sewage disposal and lake purification of increasing importance. Water from certain points in the lake found to be pure last summer, now contains sewage bacteria. This is due to the difference in prevailing winds and other causes.

Water Clarified with Lime and Iron Sulphate

Muskogee, Okla.—After considerable experimenting at the Hyde Park pumping station, City Engineer L. B. Kinsey has arrived at satisfactory results in clarifying the muddy water from Grand River, by the use of sulphate of iron and lime. The chemicals are added to the water at the main intake and the sedimentation takes place in the basin. Twenty-seven pounds of iron sulphate per hour and 80 pounds of slacked lime are the proportions used. The city's daily supply is 1,800,000 gallons.

Meters to Be Generally Installed in New Bedford

New Bedford, Mass.—The Water Board and Council have decided to require the use of meters by all consumers. The meters will be furnished by the city and the rate will be 15 cents per 1,000 gallons, except for fire protection. All city buildings will be metered.

STREET LIGHTING AND ELECTRIC POWER**City Gas Plant Has Most Inspections**

Holyoke, Mass.—The local municipal gas plant is held to a more rigid accounting in the quality of its gas than most other public plants in the State. The number of inspections that the State makes is governed by the amount of gas that is sent out. With every increase in the amount of the output beyond a certain figure, inspectors are added. The business of the local plant has already attained such size that some 25 inspections were made last year.

Philadelphia Improvements in Street Lighting

Philadelphia, Pa.—Results of tests of street lighting systems made by Chief McLaughlin, of the Electrical Bureau, have been submitted to Director of Public Safety Clay. The Chief advises the use of lamps with opalescent globes, 18 feet above the sidewalk. In conducting the tests from which the conclusions were drawn, the surface of Girard avenue was divided into blocks 10 feet square, and tests of candle power at each corner of these squares were taken. Regarding globes, the report says:

The general fluctuations of the lamps were more apparent when the lamps were equipped with the clear globes than when covered with opalescent globes. The distribution was not as good and sharply defined; shadow paths were also developed. While the average distribution when clear globes were used was .653 candles in comparison to .438 candles as shown by test covered by the opalescent globes, still, at the same time, the quality of the light produced by the opalescent globes is so much superior to the light furnished when clear globes were used, that beyond question it is highly desirable in highway illumination of this character, that opalescent globes shall be used.

FIRE AND POLICE**Firemen Set Fire to Get a Job**

Elizabethtown, N. Y.—Officials of the town of Lewis, Essex county, have adopted a plan designed to discourage arson in the Adirondacks. In an official communication to the Forest, Fish and Game Commission the Town Auditor says:

You are hereby notified that we have this day fixed the price for fighting fire at 75 cents per day. We have sifted this thing to the bottom and there is not a shadow of a doubt but what the game law and the price per day paid our fire wardens and fire fighters has caused the destruction of every acre of forest timber in our town, including some of the finest timbered lots in the Adirondacks belonging to the State. Besides, it has brought a burden on our taxpayers that is well nigh unbearable.

They therefore demand of us that we fix a price so small that there will be no incentive for setting fires to get a job, which they are positive has been done. If the game law and the fire law is not immediately repealed our beautiful Adirondack forests are doomed to destruction.

More Authority for Fire Chief

Nashville, Tenn.—The Nashville Board of Underwriters has framed a petition asking the City Council or the proper authority to give the Chief of the Fire Department or the Chief of Police authority to compel owners of property to keep their premises in good condition relative to danger from fire. This action was the result of an interesting report made to the Board by several of its members. It appears that in the business district of Nashville there is a place of business, the owner of which allows to remain in bad condition and exposed to fire by the physical condition of same. As the owner carries no insurance, not believing in such things, he declined to put his property in condition. Business houses on either side of this owner complained about it, as their insurance rates would be advanced if the adjoining property was not kept in better condition. The attention of Chief Rozetta of the Fire Department and Chief Curran of the Police Department was called to the case, but both stated that there was no law now which authorizes them to compel this owner to keep his property in insurable condition. Inasmuch as the owners on both sides of this property are being affected by the negligence of this owner, it is believed the city has the authority to compel him to place it in condition.

Three Fugitives Made Prisoners by Police Dogs

Brooklyn, N. Y.—Max and Nogi, police dogs stationed at Parkville, in the outskirts of Brooklyn, distinguished themselves by running down and capturing three men who were escaping from the police. For the first time since they were put on the force a year ago the highest hope of Commissioner Bingham for them was realized. They tripped the fugitives by running between their legs and held them until their masters could come up and arrest the men. Honors are equally divided between Max and Nogi, though the former was the first to land his man. Policeman James O'Day was out with Max at 4 o'clock in the morning, watching for thieves. At Thirteenth avenue and Fiftieth street he heard frantic cries for help. Running up Fiftieth street to New Utrecht avenue, with Max straining at his leash, O'Day saw three men pummeling a fourth. As the dog and policeman came up the three men ran. O'Day loosed Max, who in full cry raced after them. The policeman then fired five shots in the air to attract attention and blew his whistle. Policeman Michael Nicholson, with Nogi, was at Forty-seventh street and Eleventh avenue. Running down to Twelfth avenue he saw the fugitives with Max half a block behind them. He released Nogi and that dog took up the chase. Max, at Forty-fifth street, caught up with the last of the trio and hurled himself as if from a catapult into the small of the man's back. The man fell as if he had been hit by a battering ram. Leaving the man half stunned Max ran between the legs of a second man and tripped him. Nogi tripped the third man. Growling and jumping from one man to another, the dogs held their prisoners until the policemen arrived.

Flashlight Patrol System for Lockport

Lockport, N. Y.—Mayor Minard and Police Commissioners Earl, Reynolds and Jack, recently witnessed near the City Building, a demonstration of the flashlight patrol system by Max R. Eaton, President of the Niagara County Home Telephone Company and inventor of the system, which is at present in use in North Tonawanda and other cities. The system is simple but effective. It consists of a patrol box about as large as the present fire alarm boxes, in which is a telephonic connection with Police Headquarters and a hook. By pulling down the latter the officer on patrol registers the box number, time, etc., in headquarters. If headquarters wants to get into communication with an officer on the beat the pressing of a button flashes a red bull's-eye on three sides of the patrol box. As soon as the officer sees this light, and it can be seen a great distance, he goes to the box and calls headquarters to ascertain what is wanted. If an arrest is to be made on his beat or some fugitive from justice is headed his way headquarters can communicate the fact to him, and he can act quickly. At present a man has to be dispatched from headquarters on all errands, similar to the above. Another feature of the system is the push button connection with headquarters and with the ambulance and patrol wagon headquarters. By the pressing of a button in the patrol box a card, bearing the word "Patrol" drops in headquarters and a bell rings in the patrol wagon headquarters. The driver can get his horses in readiness and headquarters can have the men in waiting for action.

Louisville Firemen Aid Flood-stricken Town

Louisville, Ky.—In response to an appeal from the citizens of Shepherdsville, Fire Chief Fillmore Tyson sent a fire engine and crew to pump out cellars and polluted wells. The appeal was made by telephone and represented that nearly every cellar in the town had been filled, and that all the wells were top full of muddied storm water. It is feared that the impurities if not removed would cause an epidemic later of typhoid fever. Shepherdsville is about eighteen miles from Louisville, just over Salt river, in Bullitt county. The damage from the high water was severe, and was due to Salt river breaking its bounds.

Fire Improvement Urged

Freeport, L. I., N. Y.—At a dinner given by Fire Chief A. B. Wallace to the Board of Fire Commissioners and others, recommendations were made that property be purchased for hose houses, the lower floors of the houses be lowered and made of concrete; that the headquarters building be raised two feet; that consideration be given the formation of additional companies in the department, which are needed, it is declared; consideration of a proposition for submission to the taxpayers to acquire land and erect a building, or purchase one already erected, for municipal purposes; a shriller toned fire alarm whistle, the adoption of a building code, and the appointment of a competent builder, who is a member of the Fire Department, as inspector, and several other matters of a minor character.

Tablet Design for Police Heroes

New York, N. Y.—The Municipal Art Commission has sent to General Theodore Bingham, Police Commissioner, with its approval, a water-color drawing of a proposed tablet to be placed in the entrance hall of the new Police Headquarters Building. The tablet, which was designed by Hoppin, Koen & Huntington, the architects, will be a marble slab surmounted by the city's coat-of-arms, and the names of police heroes, past and future, will be placed thereon in raised letters of bronze. Commissioner Bingham heartily approves the sentiment and the design. The building, which is virtually finished, fronts 300 feet on Centre street, 90 on Grand and 48 on Broome. It is six stories high, surmounted by a dome. The appropriation for the building was \$750,000.



Prompt Service by Police Substations

Indianapolis, Ind.—Chief of Police Robert Metzger and Captain Martin Hyland have made the selection of locations for the four police substations that are to be established within the next few weeks. All the places chosen are cottages and leases have been taken for two years, and they will be remodeled to meet the requirements of the department. A desk man and two teams of bicycle policemen will be placed at each station, the bicycle teams to alternate on night and day duty, answering all bicycle calls in their section of the city. The men in charge of the desks will be chosen from the ranks of the department, while it is also planned by Chief Robert Metzger to have the patrolmen who have districts near the substations to report there for roll call, a sergeant going from headquarters to conduct that function. This will enable the men to get to their districts earlier, as they will not have to cross the city to get there. The new substations will be equipped with telephones that connect not only with the city telephone exchanges, but will also have private wires running directly from headquarters, thus enabling the department to get into immediate communication with the substations. Chief Metzger also believes that burglary calls will be answered more expeditiously under the new system, the men being able to take all calls in their district and get to them without first making long and tiresome rides. The Board of Public Safety will promote twenty-six patrolmen to be bicycle officers, sergeants and mounted officers and appoint twenty-six men to fill the vacancies thus made. The men promoted are to be stationed in the four police substations that will be established within the next few weeks. Twenty-one of the new appointees are to be named by members of the City Council, each Councilman to be entitled to one appointment, this being one of the conditions under which Council passed the appropriation of \$25,000.

Plan Higher Pressure System

Lynn, Mass.—The Water Board has submitted to the Mayor and Common Council four plans for increasing the water pressure in the city, as a means of fire protection. At present the city has a maximum possible pressure of 65 pounds in the center of the city; this, however, is cut down by a pressure reducing valve because there are about 17 miles of cement-lined pipe in the city which will not stand the full pressure. This it is proposed to remove. Besides this, increased pumping facilities and high reservoir or stand pipes are recommended which will give a pressure of about one hundred pounds in the central section. Chief Harris estimates that with increased pressure, three of the seven engines now in service could be put in reserve at an annual saving of \$8,300.

Women Wanted on the Police Force

St. Louis, Mo.—A resolution calling for the appointment of women police officers almost broke up the meeting of the City Park Committee. The resolution was introduced by Mrs. F. H. Ingalls, President of the St. Louis district W. C. T. U., and was greeted by a storm of protests. Mrs. Ingalls asked the convention to indorse the resolution asking for the appointment of women to the St. Louis Police Department to accompany the men patrolmen when women or children were to be arrested. The resolution was drawn by Mrs. Ingalls after a meeting of the W. C. T. U. to protest at the arrest of a pretty young stenographer, who is accused of acknowledging she forged deeds. The girl was arrested at her home without a warrant at 1 o'clock in the morning by a squad of policemen and detectives, who surrounded the house and threatened to break in the doors. The manner of the arrest aroused the women to act. After a heated debate Mrs. Ingalls's resolution was adopted by the convention.

State Fire Warden for West Virginia

Wheeling, W. Va.—A new job has been created by the Legislature, that of State Fire Warden. The leading aspirant for the position is Moses C. Kindelberger, Assistant Chief of the Wheeling Fire Department. He is backed by the insurance men, and Charles H. Henning, of the same city, and a former Circuit Court Clerk, is another candidate. It is believed the appointment will come to Wheeling, as this city has the only Department on a metropolitan standard in the State, and as the insurance men will have to pay the salary their influence will cut a figure. The appointment is to be made by Auditor J. S. Darst in his capacity as Insurance Commissioner.

Council Rejects Private Alarm System

Portland, Ore.—Council has rejected the proposed franchise of a private company to operate a plant in connection with the city's fire alarm service. The company promised to give the city a number of fire alarm boxes and 1 per cent of the gross earnings of the corporation. Chief Campbell, of the Fire Department, and City Electrician Savarian, reported against the franchise, contending that wires of a private concern organized for commercial purposes should not be attached to the city's fire alarm system which cost hundreds of thousands of dollars. Injury to the city's system might result from giving access to the city's boxes to the employees of the auxiliary system who might injure them.

First with Report—Every City Beaten

South Bend, Ind.—South Bend beat the whole country in issuing the annual report of the Police and Electrical Departments of the city. The reports were delivered to Harry Coil, Clerk of the Board of Public Safety, February 18, and one was immediately mailed to Major Richard Sylvester, Chief of Police of Washington, D. C., and to the Bureau of Statistics at Washington. It has always been a race between South Bend and Washington Departments in issuance of annual reports, and as no report has been received by the South Bend Department from any city, Chief of Police James McWeeny feels confident South Bend has beaten every city in the country.

GOVERNMENT AND FINANCE

Will Receive Bids for All Supplies

Charleston, S. C.—A bill has been introduced in Council by Alderman Pinckney providing for the calling of bids for all supplies and the making more uniform of the system of purchasing. The bill is designed to prevent favoritism and to secure the most advantageous results to the city by the inauguration of a strictly competitive system of buying. Under the proposed ordinance, every dealer, merchant or firm will have an equal opportunity to sell the city supplies and the day for officers and others in authority in these institutions dealing with certain parties and firms to the exclusion of others will end.

To Prevent Overdrafts of Special Funds

Davenport, Ia.—An ordinance has been passed by the City Council which makes it a violation of the law to pay out money from any special fund when that fund is overdrawn and provides that instead the city treasurer shall issue a warrant for the amount and stamp on the warrant "issued because the fund is overdrawn." This means that when one fund is overdrawn money cannot be taken from another fund to make it up.

Accept Bids for City Jobs

East Stroudsburg, N. Y.—The Town Councilmen originated and put in effect at their last meeting an original plan for filling public positions. They asked bids for salaries at which those who wished for the jobs would be willing to work. Nine bids were received for that of water superintendent and that of the lowest bidder, \$45 a month, was accepted. The bidding for secretary was spirited, and the job was finally knocked down to a young lawyer for \$125 a year. How much consideration was given to the qualifications of the candidates is not stated.

Richmond Favors Government by Commission

Richmond, Va.—The annual message of Mayor D. C. Richardson, transmitted to the City Council, recommends among other things a change in the present form of the city government so that the administrative functions, now vested in various standing committees, appointed by the presidents of the respective branches of the Council, be put in the hands of commissions. A committee is now investigating the various forms of municipal government in force in many of the larger cities of the country, and until this committee reports no action will be taken on the Mayor's recommendation. The mayor gives as one of his reasons for the commission plan that under the present system "salary grabbing" has reached a point where a halt must be called if the city intends to make any progress.

Amendments of Paine Law Cause Chaos

Toledo, O.—City Solicitor Charles Northrop has made it clear to Attorney-General Denman that a condition of chaos in city governments will result from the latter's opinion that under the Paine law the Mayor must appoint on August 1 of this year a single Director of Public Safety. As the new law providing the Federal plan for municipal government goes into effect August 1, with the exception that elective officials are to serve out their terms, which expire January 1, and as the present Boards of Public Safety of two members are appointive officers, the Attorney-General held that the new single Director of Safety must be appointed by the present Mayors August 1. Solicitor Northrop pointed out an overlooked point. This is that no contract in the Safety Department involving an expenditure of over \$500 can be made without the approval of the Board of Control. The Board of Control is to consist of the Mayor, the Director of Public Service and the Director of Public Safety. But the Board of Control does not come into existence until January 1, for one member of it, the single Service Director, is not to be appointed until January. No contracts for the Police or Fire Departments may be made between August and January except for petty jobs costing under \$500.

Tax Bills to Show Assessment Liability

Washington, D. C.—Commissioner West has submitted to the other District Commissioners for their approval a plan whereby tax certificates, which now show whether taxes are due and unpaid on property about to be transferred, will also show whether work is being carried on which will make the property in question liable to later special assessment. At present tax certificates show upon their face whether taxes are due and unpaid, but it frequently happens that special assessment work, which is in progress, is not noted on the certificate, and several months after the transfer of property has been completed amounts due for special assessments on work begun before the transfer of title have been found not to have been included in the settlement. There is no law to compel notification, and one of the features of the problem has been to preserve the District from assuming a liability which is not imposed by law.

REFUSE COLLECTION AND DISPOSAL

✓Sprinkling Streets Before Sweeping

Athens, Ga.—The Board of Health, under whose direction the Street Cleaning Department is now being run, has decided to have the streets sprinkled each night before the sweeper does its work. This is done to avoid stirring up so much dust and annoying the many pedestrians who are out at night on the streets, as well as to keep from throwing dust into stores or other places along the streets.

Sweeping Ordinance for Hartford

Hartford, Conn.—An ordinance has been proposed by the joint Council Committee and the Street Board, the object of which is to do away with the nuisance caused by sweeping the sidewalks in the business district at all hours of the day. It is proposed to prevent such sweeping between the hours of 8 a. m. and 9 p. m., so that all this dust-raising and unhealthy work may be done at times when the crowds are largely off the streets.

Central Streets Clean, Others Otherwise

Hoboken, N. J.—A good deal has been said lately about the clean streets of Hoboken, and justly so far as the streets in the retail business section and the principal residence streets are concerned. On the side streets, away from the central district, other conditions are found, as shown in the illustration. On Sixth street a recent investigation found the sidewalk covered with a dirt pile several feet high, while the road and the street from one side to the other was filled with paper, old tin cans, old wash boilers and miscellaneous rubbish.



DIRTY SIDE STREET IN HOBOKEN, N. J.
Courtesy of the Jersey City Evening Journal

To Exhibit City Reduction Works

Cleveland, O.—An exhibit of the products and operating methods of the municipal garbage disposal plant probably will be a feature of the Cleveland Industrial Exposition to be held under the auspices of the Chamber of Commerce this summer. W. J. Springborn, president of the Board of Public Service, will ask that space be set aside for this purpose. Mr. Springborn said the garbage plant is now doing a rushing business, and is disposing of all its products as fast as they are ready for the market. An inquiry has been received from a concern wanting to take 200 tons of fertilizer every week. The total output is 400 tons a week. The order probably will be turned down, as nearly all of the fertilizer is contracted for at present.

RAPID TRANSIT

Car Trailers Soon to Go

Chicago, Ill.—The doom of the street car trailer in Chicago is sealed. One by one these ancient vehicles that have tried the patience of two generations of the traveling public are going upon the scrap pile out at Lake street and Fortieth avenue. In a few months they will have disappeared entirely from the streets. Of the hundreds of trailers once operated by the North and West Side street car companies only 92 remain in use at the present time. These are on the Lincoln, Ashland, Western and Kedzie avenue lines. The 32 old-fashioned cars still being trailed on the Lincoln avenue line are to be taken off and relegated to oblivion, and then the only examples of the genus will be found on the lines on the far West Side.

Rapid Transit Subway Proposed for Newark

Newark, N. J.—At a conference of city officials called to consider a pending legislative bill providing for the construction and operation of a rapid transit subway, it was resolved to support the bill, with certain amendments which were suggested by Chief Engineer Morris R. Sherrerd. The object of the bill is to do away with the obstruction to traffic at Broad and Market streets, the principal streets of the city. It is proposed to build a subway through Market street at a cost of not over \$2,000,000, to be owned by the city and leased under a fifty-year contract for operation. The road would probably be operated in connection with a rapid transit line to New York over the Pennsylvania Railroad, through the Hudson Company's tunnels or both.

Maltbie Favors Indeterminate Franchise

New York, N. Y.—Milo R. Maltbie, of the Public Service Commission, has submitted to the board a report advocating the granting in future to the transit corporations of "indeterminate franchise." This indeterminate franchise is one that depends on the "good behavior" of the companies and can be vacated at any time by the Public Service Commission or the city authorities when it is proved that the company is not living up to its obligations. Mr. Maltbie says there are objectionable features to both the perpetual and the short-term franchises. He says that the perpetual franchise is generally detrimental to the public interests and that the short-term franchise is sometimes unfair to the corporations. The indeterminate franchise, he says, provides a means for the doing away with both objections.

Subway for St. Louis

St. Louis, Mo.—Plans and estimates have practically been completed for a passenger and express subway from near the Eades Bridge downtown to Taylor avenue, in the west end of this city, the cost of which has been estimated at nearly \$40,000,000. Four branch lines are also planned, an organization has been effected and all necessary capital pledged, all of which is to be furnished by New York capitalists. An ordinance is being prepared to be introduced to give the corporation a franchise in April.

MISCELLANEOUS

City Museum Projected

Newark, N. J.—The plan of establishing a municipal museum has been endorsed by the finance committee of Common Council and a resolution has been passed declaring in favor of securing legislation necessary to establish such a museum. The public library building has sufficient space available for housing the collections for some years to come. The movement was started at this time partly because the city has an opportunity to purchase a collection of 3,000 Japanese art objects for \$10,000 which has been appraised by Sir Caspar Purdon Clarke, curator of the Metropolitan Museum of Art, New York, at not less than \$30,000.

Activity of New Orleans Engineering Department

New Orleans, La.—Captain William J. Hardee, City Engineer, says that the extent of the public improvements executed under direction and supervision of the Engineer's Department has increased enormously in the past few years. When he became Engineer in May, 1900, there were but three assistant engineers in the department, and at that time and for several years following they were able to comfortably look after the work of the department; in fact, while they were kept busy for months at a time, at other times they had little to do, whereas at present and for the past few years there have been nine assistant engineers, and every one of them has had his hands full all the time.

City Raises Pay of Its Laborers

Portland, Ore.—Wages of 100 laborers in the Street Cleaning and Sprinkling Department have been increased from \$2.50 to \$2.75 a day by an ordinance passed by the City Council, and all the laborers in the other municipal departments have petitioned for a like increase. It is said that laborers' salaries will be raised all along the line. This means that each laborer will receive approximately \$78 more a year than under the old schedule, and as there are 300 more laborers in the employ of the various departments of the city, the increase in the salary roll will be approximately \$24,000 annually. The employees of the city work eight hours a day.

Improvement of Chicago Harbor

Chicago, Ill.—The Harbor Commission is preparing a report for presentation to the City Council. Although the plans, if carried out as recommended, will cost from \$200,000,000 to \$300,000,000, the Commission has hopes that they may be adopted. There is no question that Chicago is losing trade because of its inadequate harbor and dock facilities. The plan proposed contemplates the widening, deepening and straightening of the Chicago river, together with the construction of a wide turning basin at the junction of the branches of the main stream, together with a complete system of docks.

Playground Act Popular

Boston, Mass.—The returns from the Massachusetts towns which held town meetings March 1 show that the new State playground act was accepted by every town which took action on the proposition. Twelve towns, each with a population of over 10,000, held meetings, and two of them did not vote on playgrounds. The ten towns cast a total vote of 11,064 in favor and 3,534 against. These towns are Attleboro, Clinton, Gardner, Hyde Park, Leominster, Milford, Framingham, Wakefield, Watertown and Weymouth.

Sixty School Yards for Playgrounds

Philadelphia, Pa.—Sixty school yards are to be opened in Philadelphia this summer to be used as playgrounds for the children. These grounds are to be in charge of trained teachers, and will be thoroughly equipped with the proper apparatus. They will be open from 9 o'clock in the morning until 5 in the afternoon.

Indianapolis Reaches Telephone Agreement

Indianapolis, Ind.—The City Council has passed the new franchise of the New Telephone Company and the Indianapolis Telephone Company, which have been pending for a year, granting an extension of several years in the life of the former corporation and permitting an increase in rates. There are now about 25,000 telephones in use in Indianapolis, one for every other house. The cost is believed to be less than that in any other city in the United States and the service as good. The rates specified are for unlimited exchange service until such time as the company shall have 15,000 line telephones, and are as follows:

Divided circuit of not more than four telephone instruments, \$20 per annum, residence service.

Divided circuit of not more than two telephone instruments, \$24 per annum, residence service.

Individual residence service of not more than one instrument on a circuit, \$30.

On each of the above rates, the subscribers will be entitled to an allowance of 50 cents a quarter, when rental for the quarter is paid in advance before the tenth day of the first month of the quarter.

Business rates are to be as follows: Divided circuit of not more than two telephone instruments, \$36 per annum; individual service of not more than one instrument on a circuit, \$54 per annum.

State Bureau to Investigate Toledo Accounts

Toledo, O.—Following the report of conditions in the Toledo Water Works Department filed by the State examiners, a complete investigation of all Toledo city departments will be made by the State Bureau of Uniform Accounting. This will be started at once. The cemetery accounts will be the first thing taken up in the resumption of the probe. Examiners Wilbur E. Baker and Franklin Parmlee have been detailed upon the work for which months will be required.



DOCKS AND WAREHOUSES FOR PROPOSED HARBOR IMPROVEMENT, CHICAGO, ILL.

LEGAL NEWS

Summary and Notes of Recent Decisions—Rulings of Municipal Interest

PAVING GUARANTEE BONDS—LIABILITY

Aetna Indemnity Co. vs. City of Little Rock.—Sureties for the performance of a contract to pave that part of a street outside the tracks of a street railroad company, and which provided that, if the street car company failed to pave its part of the street, the city might elect to have the work done by the paving company under the conditions, terms, and specifications provided in the contract, were not discharged by a subsequent agreement between the city and street car company that the space to be improved by the street car company might be paved with a different material and that the work should be done by another contractor; such subsequent contract not constituting an alteration of the terms of the surety contract. A surety on a municipal contractor's bond, who received a consideration for the execution of the bond, was estopped to assert that the bond was void because the city was without authority to take it. Sureties on a bond given by a paving company to maintain an asphalt pavement for a term of years would be discharged if the city permitted the asphalt to be laid at a lesser degree of heat than the contract provided for, thus impairing its durability. In an action against a surety on a bond to maintain an asphalt pavement, evidence held not to show that there was a departure from the contract for laying the pavement in regard to the temperature at which the asphalt was laid. In an action by a city against the surety on a bond to maintain a pavement in repair, that the city had failed to keep the street free from deleterious substances which impaired the wearing of the pavement was immaterial; the city not having contracted to keep the street clean. The asking by plaintiff of a peremptory instruction to find against one of two defendants is in effect a dismissal as to the other defendant.—Supreme Court of Arkansas.

STREET OBSTRUCTIONS—LIABILITY

Lefkovitz vs. City of Chicago et al.—The Constitution provides no remedy by way of damages to an abutting owner for the temporary obstruction of a street while a public improvement is being constructed therein. "Temporary," as used in the rule that an abutting owner is not entitled to damages for the temporary obstruction of a street while a public improvement is being constructed therein, is the opposite of "permanent," and means a period of time commensurate with the reasonable prosecution of the work. In the absence of an averment in a declaration for damages occasioned by the obstruction of a street as to the character of the work in which the city or its agent is engaged, the presumption is that the city or its agent is engaged in a lawful undertaking and acting with reasonable dispatch in putting in the improvement, and that the obstruction will not be maintained an unreasonable length of time, and the declaration fails to state a cause of action.—Supreme Court of Illinois.

CONTRACTS—TIME LIMIT

Rackliff et al. vs. Peters et al.—Under St. Joseph City Charter, providing that ordinances for public improvements shall fix the time within which the work shall be completed, and that the Council shall not consent to more than two extensions of the time, etc., an ordinance declaring that the work shall be completed within a specified time after the awarding of the contract, provided the days' work lost in consequence of injunction, court proceedings, bad weather, strikes, etc., shall be added to the number of days specified, is invalid, because it fails to fix the time for the completion of the work, the word "fix" meaning immovable or definite; to determine or settle definitely; to decide definitely.—Kansas City Court of Appeals.

REMOVAL OF OFFICER—COURT REVIEW

Sullivan vs. Martin, Mayor.—A hearing given an appointive city officer by a Mayor contemplating his removal, not being a trial, but merely a hearing precedent to his executive action, an appeal therefrom to the Superior Court does not transfer the proceeding to that court for a rehearing on the facts, the decision of the Mayor thereon being final, but the purpose of the appeal is only to provide a summary process by which the court may revoke the order of removal, if any essential formality has been omitted, or perhaps if the executive power has been exercised so arbitrarily as to defeat the real purpose of the law in modifying an absolute discretion in removal.—Supreme Court of Errors of Connecticut.

PUBLIC PARK—VESTED RIGHTS

East Chicago Co. vs. City of East Chicago.—Burns' Annotated Statutes, 1901, gives a city power to purchase, hold, or convey real estate for use as a public park or for other public purposes. Clause 47 provides that the Common Council may, upon petition of a majority of legal voters, sell any public square, and any money arising from the sale shall be deposited in the city treasury to be expended in purchasing any other public square and in improving it. Held, that a city can accept a title to land condition upon the continued use of the property in a particular way as well as an absolute and irrevocable title, and, upon being petitioned as required, the Council can sell whatever interest the city has acquired in land conveyed to the city for a public square, and, where land had been conveyed to a city for such a purpose on condition that if it were used for other purposes it should revert to the grantor, the Council had power to convey the land to the owner of the reversionary interest vesting a fee-simple title in it. Owners of private property in the vicinity of a public square, whose means of ingress and egress would not be destroyed or affected by a discontinuance of its use for public purposes, have no vested rights in its continued use as a public square, their losses being merely consequential and not direct, and its discontinuance would not be a taking of private property without compensation.—Supreme Court of Indiana.

SIDEWALK—CHANGE OF GRADE

City of Marshall vs. Allen.—A city cannot deprive itself by contract of any of its legislative powers, so that an agreement by a City Engineer that a sidewalk should only be graded to a certain depth would not deprive the city of its charter's power to grade its sidewalks, though the Engineer had express authority to make the contract, and it was supported by a consideration. The solvency of a municipal corporation should not be determined by the tests applied to an individual, and a city is not insolvent merely because it is unable to pay its debts when due by reason of restrictions on its taxing power, so that, for the purpose of a suit by a property owner to enjoin a city from grading a sidewalk because of its insolvency, the city will be regarded as solvent, where it is performing all its governmental functions, and has been able to meet all its obligations, even though its finances are in such a condition that it might not be able to pay damages resulting from the grading after the work is done.—Court of Civil Appeals of Texas.

RETAINING WALL—INJUNCTION

Patterson et al. vs. City of Burlington et al.—Where the improvement of a street consisting of the construction of a retaining wall outside the limits thereof and of bringing the street to grade is in itself reasonable and proper for public use, the fact that the city has made an arrangement with a street railway company benefited by the improvement whereby it will do the filling without cost to the city, so that the total cost will be less than if the wall had been constructed within the street limits, does not justify a taxpayer to sue to restrain the construction. Where an owner of land abutting on a street granted in writing to the city permission to build a retaining wall on his property, and the city accepted it and acted on it by constructing the wall, the city acquired an irrevocable right to maintain the wall in perpetuity.—Supreme Court of Iowa.

PUBLIC IMPROVEMENTS—PUBLICATION

Village of Bellwood vs. Latrobe Steel & Coupler Co. et al.—Under Local Improvement Act, requiring a proposed ordinance for public improvements involving a certain amount to be referred to the proper committee and published in the proceedings of the Board of Trustees with the recommendation and estimate, where, though the ordinance, with the recommendation and estimate, was published, the proceedings of the board at the meeting when the ordinance, etc., was presented, were not published, the ordinance was void. The County Court was without authority to confirm a void ordinance for public improvements; and hence a petition to confirm a special assessment made thereunder was properly dismissed.—Supreme Court of Illinois.

RIGHT OF WAY

City of Manchester vs. Hodge et al.—Abutting owners upon a private way can use the opposite half of the way which abuts upon a cemetery, and the legal title of which is in the city as trustee for the cemetery, for travel only, and can only use the other half for travel and other purposes not inconsistent with its reasonable free use as a way by the city in going to and from the cemetery, and an obstruction of the way will be restrained.—Supreme Court of New Hampshire.

WATER WORKS ARBITRATION—EVIDENCE

City of Eau Claire vs. Eau Claire Water Co. et al.—Where a submission to arbitrators was solely to decide the value of a water works plant, excepting certain elements, a written award directly responsive to the submission and declaring that the arbitrators had ascertained the value of the property, excepting only that which the contract directed to be excepted, to be a certain sum, was on its face final and conclusive between the parties as the judgment of any other tribunal having jurisdiction to decide the question, not excepting a court of law or equity. Every presumption is in favor of an award on its face final and conclusive between the parties, and its invalidity must be shown by any one asserting it by clear and satisfactory evidence. Under a submission to arbitrators to determine on examination and evidence the value of certain property, the board had plenary power to decide questions of the admissibility, competency, and weight of evidence. Under a submission to arbitrators to determine the value of water works property, the arbitrators were competent witnesses before the board. Under a submission to arbitrators to determine the value of certain property, the board were not confined to testimony from witnesses under oath. Testimony of arbitrators as to what transpired in the hearing and deliberation will not be received to impeach the award. Evidence held insufficient to show such undervaluation of a water works plant as proved arbitrary and fraudulent action by the appraisers. When one under a legal duty to convey property to another wrongfully refuses to do so, equity will treat the property as belonging to the grantee after the time at which it ought to have been transferred, and will treat the wrongful holder as a trustee for the purchaser's benefit, and liable to account, at least for the profits actually received. Where a city, after tender of the amount due a water company for the purchase of its works was rejected, deposited the fund with the city treasurer, from whom the company might at any time have received it on conveying the works, the tender was sufficient to stop interest.—Supreme Court of Wisconsin.

TAX ASSESSMENT—CANCELANATION

Adams, Revenue Agent, vs. City of Clarksdale et al.—Code of 1906 declares that, when an assessment roll has been properly approved, the taxpayer cannot question its validity, and that an approved assessment shall have the effect of a final judgment against the taxpayer, unless subject to be reopened under section 4312. Held, that where back taxes were assessed, and after notice to the taxpayers the assessment was confirmed at the next meeting of the Mayor and Board of Aldermen of the city, and the list was duly filed as approved, it was then beyond the power of the Mayor and Board of Aldermen to cancel such approval at a subsequent meeting.—Supreme Court of Mississippi.

MILK REGULATIONS

Ex parte Hoffman.—An ordinance regulating the sale of milk prescribed the standard as follows: Total milk solids, 12.5 per centum by weight; butter fat, 3.5 per centum by weight; water, 87.5 per centum by weight. Held, that this obviously meant that of the 12.5 per centum milk solids, at least 3.5 per centum should be butter fat, and, so read, the ordinance was not objectionable on the ground that the required standard was a total of 103.5 per centum of ingredients, and was therefore vague, uncertain, and contradictory. A mere averment that milk below the standard required by a city ordinance regulating the sale thereof may have come from Holstein cows is insufficient to tender an issue whether the ordinance is unreasonable and in restraint of trade in exacting too high a standard.—Supreme Court of California.

FRONT FOOT PAVING ASSESSMENT

Durkee et al. vs. City of Barre.—Equal assessment per front foot, of abutting property for special benefits received from the paving of a street, when, as known by the Commissioners, some of the lots were deeper, and had more valuable improvements on them than others, and the imposition of no assessments against some lots, do not show that the assessments are necessarily unjust and unequal, and therefore fraudulent.—Supreme Court of Vermont.

STREET OBSTRUCTION—NEGLIGENCE

Apker et ux. vs. City of Hoquiam.—Where a traveler was injured at night by an unguarded obstruction in a city street, he was not negligent as a matter of law because he passed the obstruction on the morning of the day of the accident, and saw, or should have seen, the obstruction.—Supreme Court of Washington.

CITY'S RIGHT TO BUILD WHARF

City of Burlington vs. Central Vermont Railway Company et al.—Cities and towns are created to perform such governmental functions as the State may, for convenience, devolve upon them. The State, in the absence of constitutional inhibition, can build or aid others in building wharves for public use and in aid of trade or commerce. The Legislature's power is practically absolute, except for constitutional limitations. The State can authorize cities and towns bordering on navigable waters to build, maintain and operate public wharves. The Bill of Rights, prohibiting the raising of a tax unless the purpose of the tax appears to the Legislature to be of more service to the community than the money would be if not collected, means that the purpose must be a public one; but what is a public purpose within that meaning is a question for the Legislature, as to which it has a large discretion, which courts can control only, if at all, in very exceptional cases. The provisions of the Acts of 1906, authorizing the city of Burlington to construct and maintain a public wharf and to borrow money for the purpose are valid. The Acts of 1906, authorizing the city of Burlington to condemn land for a public wharf; authorizing the City Council to determine the question of public convenience and necessity of its proposed action, and to award damages for the property taken, and allowing an appeal by any person dissatisfied with the award for a review of all questions involved—is not unconstitutional as denying due process of law.—Supreme Court of Vermont.

DISCHARGE OF SEWAGE INTO RIVER

Board of Health of State of New Jersey vs. Inhabitants of Town of Phillipsburg.—Every municipality having a public sewer, or system of sewers, drain, or system of drains, legally constructed at the date of the passage of "An act to secure the purity of the public supplies of potable waters in this State," approved March 17, 1899, is, under the first proviso of the first section, exempt from the provisions of the enacting clause, and therefore is exempt from the provision against dumping refuse on the bank of a river, as well as from the provision against discharging sewage into it; the clearly expressed legislative intention being to exempt such municipalities from all the provisions of the act.—Court of Chancery of New Jersey.

INTOXICATING LIQUORS—EVIDENCE

Bray vs. City of Commerce.—On the trial of one charged with the violation of a city ordinance in having on hand intoxicating liquors for the purpose of illegal sale, proof that the accused received money from another person, accompanied by a request to procure whisky for the latter, and thereafter went off, and in a short time returned and delivered a bottle of whisky to that person, the onus would be cast on the accused to show where, how, and from whom he got the whisky. The burden would be successfully carried by the accused if, in corroboration of his own statement, he proved by an unimpeached witness that he had in fact bought the whisky from another person and paid him for it.—Court of Appeals of Georgia.

SEWER ASSESSMENT—PROPERTY LIABLE

Beckett et al. vs. City of Portland et al.—Under Portland City Charter authorizing the Council to establish sewer districts and assess the cost of constructing sewers on property therein according to benefits, and making its action final and conclusive, the action of the Council in establishing a sewer district and determining the question of benefits and making the assessment is conclusive on the courts in a collateral attack, unless the action of the Council is a fraud on its face. Where a municipality is authorized to establish assessment districts and assess the cost of constructing sewers on the property therein according to benefits, property benefited by the improvement is liable to assessment, though it is nonabutting property and no laterals have been laid to it.—Supreme Court of Oregon.

DEFECTIVE SIDEWALK—EXTENT OF INJURY

Krisinger vs. City of Creston.—That one injured by a loose plank in a walk had passed over it twice a day for eight months before the accident does not necessarily show that the city should not be charged with notice of the defect. Two thousand five hundred dollars was not excessive recovery for injury to a woman 49 years old with a life expectancy of 22 years, where at the time of injury she weighed 225 pounds, was in good health, and had been industrious, and where the injury confined her for three months, incapacitated her for work, resulted in varicose veins, affected her kidneys, ruptured abdominal muscles, causing ptosis abdominalis, caused pain at the stomach and the junction of the ribs and breastbone, and indigestion.—Supreme Court of Iowa.

NEWS OF THE SOCIETIES

American Water Works Association.

—At the Milwaukee convention, June 8 to 12, special attention will be given to the subject of boiler rooms. Papers will be read describing different types of boilers and their advantages for various kinds of pumping stations. Automatic stokers vs. hand firing and questions of boiler waters will be taken up. A special effort will be made to have short papers on practical subjects presented. The committee on standard accounts, working in conjunction with the United States Census Bureau, will report on progress. Other committees will report on electrolysis, fire protection, water works standards and water supply investigation.

American Civic Alliance.—Invitations have been issued for the inauguration banquet of the American Civic Alliance, which will take place at the Hotel Plaza April 15. The aim of the alliance is to unite the leading men and women of the country in a movement to "provide a means whereby the wisdom of the ablest can be placed at the service of the whole nation." The plans of the organization include a national institute of political research, a school of political science and a bureau of public education, the work of which will be largely carried on by means of publicity. N. Lafayette Savay is president of the alliance, the New York council of which includes Bishop Burgess, Bishop Greer, Henry Clews, George B. M. Harvey, Mr. McAneny, president of the City Club; W. G. McAdoo, Emil L. Boas and Adolph S. Ochs. The speakers and guests of honor at next month's dinner will include men of national reputation in the educational, business and financial world.

Northwestern Cement Products Association.—At the convention in Minneapolis, Minn., March 5, the following officers were elected: Martin T. Roche, St. Paul, president; J. C. Van Doorn, Minneapolis, secretary; J. M. Hazen, Minneapolis, treasurer; Henry E. Murphy, Manitowoc, Wis.; Lee Stover, Watertown, S. D.; A. M. Laughlin, Lisbon, N. D., vice-presidents, and L. V. Thayer, Minneapolis, and William Hurst, Glendive, Mont., vice-presidents, to succeed O. U. Miracle and C. A. P. Turner, Minneapolis. Every one was more than pleased with the success of the cement show at the armory, and officers of the association, exhibitors who had come from other cities and cement dealers voted the convention the most successful ever held west of Chicago.

American Institute of Electrical Engineers.—"Single Phase Railways" was the subject for discussion at a regular meeting of the Pittsburg Section, American Institute of Electrical Engineers, held March 9 in the lecture hall at Carnegie Institute. N. W. Storer, W. Cooper, W. L. Waters and B. A. Behrend, of the Westinghouse Electric and Manufacturing Company, opened the discussion. Ten-minute papers were then read by Clarence Renshaw, S. M. Kinter, T. Varney, F. E. Wynne, G. D. Nicoll and Harry Etheridge. Preceding the meeting an informal dinner was given at the University Club.

Southern Gas Association.—The first annual meeting of the association was held at New Orleans, February 19-21. The following officers were elected: R. C. Congdon, Atlanta, Ga., president; H. W. Frund, Salisbury, N. C., vice-president; James Ferrier, Rome, Ga., secretary. Chattanooga, Tenn., was chosen as the next meeting place.

Engineering Society of Wisconsin.

At the meeting at the University of Wisconsin, when the Engineering Society of Wisconsin was organized, the following officers were elected: President, Dean F. E. Turneaure, University of Wisconsin College of Engineering; vice-president, City Engineer McClellan Dodge, of Appleton; trustees for two years, B. F. Lyons, assistant general manager of the Beloit Gas and Electric Company, and E. P. Worden, mechanical engineer of the Prescott Steam Pump Company, Milwaukee; and trustees for one year, E. Gonzenbach, of the Sheboygan Electric Light and Power Company, and City Engineer E. R. Banks, of Superior. These, as executive board, will elect the secretary later. Addresses or papers were presented at the meeting as follows: "Scope of the Highway Work of the State Geological Survey," by W. O. Hotchkiss, Highway Engineer for the Survey. A. R. Hirst, also of the State Highway Department, "Use of Tar, Oils and Emulsions on Macadam and Earth Roads"; State Forester E. M. Griffith, "Conservation of Forests and Water Resources of Wisconsin"; "Water Power Resources of Wisconsin," "Water Power Resources of the State," Prof. L. S. Smith, Engineer for both the State and National Geological Surveys; "Organization of the Commission's Engineering Staff," Prof. W. D. Pence, Engineer for the Wisconsin Railroad Commission; "Standard of Gas and Electrical Service," Prof. C. F. Burgess; "Electric Interurban Roads of Wisconsin," F. G. Simmons; "The Day Circuit for Small Towns," Prof. J. W. Shustor; "New Forms of Arc Lamps," W. E. Wickenden; "Water Supply of the City of Marshfield," W. G. Kirchoffer; "Hydraulic and Hydroelectric Power Development," Prof. D. W. Mead; "Waterproofing of Concrete," F. M. McCulloch; "Municipal Engineering in the Orient," J. T. Hurd; "Municipal Engineering in Porto Rico," Edwin Wray; "Gas Producers and Small Power Stations," V. E. McMullen; "Madison's Concrete Storm Sewer System," John F. Icke.

Calendar of Meetings

- March 17.
Western Society of Engineers.—Extra meeting, 1735 Monadnock Block, Chicago, Ill.—J. H. Warder, Secretary.
- March 17.
American Society of Civil Engineers.—Regular meeting at Society House, 220 West Fifty-seventh street, New York.—Charles Warren Hunt, Secretary.
- March 24.
Municipal Engineers of the City of New York.—Regular meeting, Engineering Societies Building.—C. D. Pollock, Secretary, 29 West 39th street, New York, N. Y. April 29-30.
- International Good Roads Congress.—Annual meeting, McCoy Hall, Johns Hopkins University, Baltimore, Md.—Arthur C. Jackson, President, Chicago, Ill.
- May 11-14.
Playground Association of America.—Third annual Congress, Pittsburg, Pa.—Henry S. Curtis, 705 Ouray Building, Washington, D. C.
- May 16-19.
City Marshals and Chiefs of Police of Texas.—Annual convention, Galveston.—Chief J. H. Maddox, Fort Worth, Chairman, Executive Committee.
- May 31-June 5.
International Association of Police Chiefs.—Annual convention, Buffalo, N. Y.—Maj. Richard Sylvester, President, Washington, D. C.
- June 1-4.
National Electric Light Association.—Thirty-second convention, Atlantic City, N. J.—John F. Gilchrist, Engineering Societies Building, 29 West 39th street, New York, N. Y., Secretary.
- June 8-12.
American Water Works Association.—Twenty-ninth annual convention, Milwaukee, Wis.—J. M. Diven, Secretary, 14 George St., Charleston, S. C.

PERSONALS

ANDERSON, WILLIAM M., Jackson, Miss.; B. G. Beaulieu and J. R. Dobbins have been elected Water Commissioners.

ARNOLD, WILLIAM O., Chief of the Fire Department of Salem, Mass., has been re-elected, and Howard C. Kimball has been made Assistant Chief.

BABA, S. K., Osaka, Japan, is visiting New York to study street railroad methods.

BARTLETT, F. D., Mayor of Berlin, N. H., has been re-elected.

BULLITT, WILLIAM MARSHALL, Chairman of the Board of Public Safety of Louisville, Ky., has resigned.

BOUDREAU, GEORGE F., South Hadley Falls, Mass., has been elected a member of the Water Board.

BROOKS, WILLIAM F., Cambridge, Mass., has been elected Mayor, defeating Mayor Walter C. Wardwell. This was the first city election under the new charter, which provides for the annual balloting in March instead of in November. The city went no-license for the 13th consecutive year and accepted the playground act.

CARTER, CHARLES, Captain in the Fire Department of East Orange, N. J., died March 6.

CROWLEY, ROBERT J., President of the Water Board of Lowell, Mass., has been re-elected; also Superintendent Robert J. Thomas.

DOUGHERTY, THOMAS J., Somersworth, N. H., has been elected Mayor.

FOWLER, E. C., Orange, N. J., has been appointed Chief of Police, and F. H. Nutting Superintendent of Sewers.

GIBBS, G. F., Chambersburg, Pa., has been appointed Chief of the Fire Department.

HARBERT, JAMES, Kalispell, Mont., has been officially deposed from the office of Mayor by the City Council. The Mayor has been absent from office beyond the statutory limit without leave of absence, being in attendance on sessions of the State Legislature, of which body he is a member.

HURLEY, JOHN R., member of the Board of Health of Paterson, N. J., died March 9.

JEWETT, FRED, Muncie, Ind.; Dr. W. A. Spurgeon and Thomas L. Warner have been appointed Police Commissioners.

KENNEDY, GEORGE, City Councilman of Youngstown, O., has taken the examination for the position of patrolman.

LOGGREEN, MILLS, Mayor of Huntsville, Utah, has resigned.

MARTIN, U. S., Shepherdstown, W. Va., has been elected Mayor over S. J. Hodges.

McCANN, A. G., Chester, Pa., Health Officer for the past six years, has resigned.

SMITH, E. MINOR, Alameda, Cal., City Assessor and Auditor, died February 19.

SOLOMON, SIMON, Richmond, Va., has been appointed Inspector in the Fire Marshal's office.

SPOFFORD, CHARLES M., Professor of Civil Engineering, Brooklyn, N. Y., has been appointed to the Hayward Professorship of Civil Engineering in the Massachusetts Institute of Technology, succeeding Prof. George F. Swain, resigned.

The Board of Water Supply of New York has announced the appointment of the following specialists: subject to confirmation by the Municipal and State Civil Service Commission: Experts on filtration, Messrs. George W. Fuller and Allen Hazen; expert geologists, Prof. W. O. Crosby, Prof. James, F. Kemp and Charles P. Berkey; expert landscape engineer, Charles W. Leavitt, Jr.; expert mechanical engineer, Arthur West.

MUNICIPAL APPLIANCES

Corrugated Metal Culverts

THE Canton Culvert Company, of Canton, O., manufactures the "Acme" corrugated metal culverts. They are made from No-Co-Ro metal, an iron of special composition, heavily galvanized by a peculiar process. The makers guarantee that they will resist rust for twenty-five years. The culverts are packed in nests of half-round sections so that they may be shipped long distances without prohibitive freight charges. The corrugated form gives great strength and when laid under a

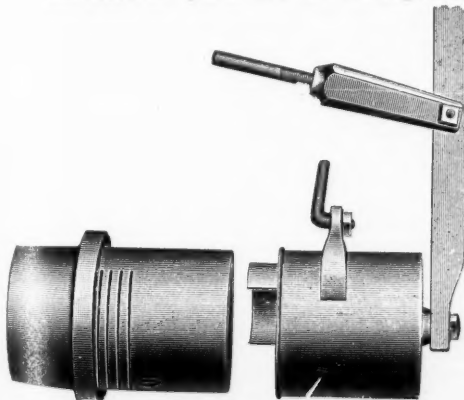


ACME METALLIC CULVERT

foot of soil they will stand heavy traffic. When set up the sections overlap for the distance of one corrugation where bolt holes are already accurately punched and a hammer and a wrench are all the tools needed to set them up.

Etnyre Sprinkling Wagon

E. D. ETNYRE & COMPANY, of Oregon, Ill., manufacture a high-grade sprinkling wagon. The accompanying illustration shows the construction of their patented sprinkling valve. There are two valves, one for each side of the wagon, which work independently of each other, controlled by two foot-levers at the driver's seat. As the operator releases the lever from the first ratchet in the foot-board, which ratchet locks the valve shut, the pressure of water causes the outer sleeve to move backward, thus exposing the slots in the inner cylinders, the desired volume of water being discharged as more or less of the slots are exposed. Thus the lightest spray or the heaviest stream is instantly obtained at the will of the operator. The several ratchets secure the levers at any desired point. By releasing the lever, so as to expose the open end of cylinder, all trash is instantly removed. The claims to merit made for the valve are simplicity and ease in operation; that it has no piston rods or packing boxes; is economical in the use of water; covers a broad surface with its spray; cannot clog; is heavy, made of brass and therefore is durable; all parts are interchangeable.



VALVE OF SPRINKLING WAGON

TRADE NOTES

Cast-iron Pipe.—Chicago: Quotations, 4-inch, \$28; 6 to 12-inch, \$27; 16-inch and up, \$25. Birmingham: It is believed that prices will be inclined to a higher basis rather than to decline, as in the case of raw material. A local manufacturer is installing equipment to manufacture the larger sizes of pipe and this will be in operation in sixty days. Quotations: 4 to 6-inch, \$26; 8 to 12 inch, \$25; over 12-inch, \$24.

Pig Lead.—Prices are a shade firmer. Whereas it was possible to obtain lead at 3.95c. last week, sales have since been made at 3.97½c., and 4c. in New York. In the West lead is held at 3.85c. The tariff question is arousing much interest in the lead market. The quotation for soft Spanish lead in London is £13 7s. 6d., equivalent to 2.92c., London. The freight being 0.10c., it would cost 3.02c., c.i.f. New York. Should the duty be cut in half, it will have no effect on the present price of lead here.

Sewer Pipe.—The Chattanooga Sewer Pipe and Fire Brick Company, Chattanooga, Tenn., manufactures sewer pipe, fire brick, fireproofing, flue pipe, flue lining, wall coping, farm drain tile and other products. The company issues a colored post card folder illustrating their plant and showing the large stock carried.

Sewer Pipe Plant.—The plant of the Streater Clay Manufacturing Company, manufacturers of clay pipe at Streater, Ill., was burned March 2. The plant is owned by Robert Green, of Ottawa, Ill., and will be rebuilt as soon as possible.

Sewerage Company Improves.—The sewerage system of Collingswood, N. J., is about to be greatly improved by the Collingswood Sewerage Company and a large extension made. The present sewage disposal plant has been too small to meet the increasing demands made upon it by the sixteen miles of pipe in the borough. The new disposal plant will be constructed at a cost of \$10,000. Along with the erection of the new plant and filter beds the pipe line will be extended three miles so as to reach all the new streets that are being opened and that have been graded since the last extension in the eastern section of the borough. When this pipe line is laid the lateral sewer pipeage will amount to nineteen miles. The work of construction will be commenced in a short time and the work will be hurried.

Gasoline Light.—The Georgia Lighting Company, 456 Second street, Macon, Ga., a company to be incorporated for the distribution of gasoline lighting devices, is prepared to furnish the trade with a light guaranteed for ten years to cost not over 75 cents per year for repairs. This light, it is claimed, will give 400 candle-power.

Pumping Engine.—The Clarion Water Works, Clarion, Pa., has recently ordered from the Du Bois Iron Works, Du Bois, Pa., an auxiliary pumping plant, comprising a 150-horsepower tandem natural gas engine geared to a 1,000,000-gallon pump, a 50-horsepower unit for driving an air compressor, a centrifugal pump and various fittings. The main pump is to operate against a head of 685 feet, pumping through a 10-inch main 4,000 feet long to a standpipe.

Sluice Gates.—The Chapman Valve Mfg. Company, Indian Orchard, Mass., has issued a bulletin, No. 2, illustrating and describing sluice gates.

Water Company.—To meet the expenses of improvements which it is planned to make from time to time in the future, the stockholders of the Johnstown Water Company, Johnstown, Pa., have authorized an increase of the indebtedness of the company to \$1,500,000, to be represented in bonds which will be issued as the money is required. The stockholders some time ago voted an issue of \$750,000 worth of bonds. This order was rescinded, none of the bonds ever having been issued. The Johnstown Water Company has in contemplation the extension of the service to meet the growing demands upon it, but these plans are yet to be perfected. The Board of Directors will decide just when bonds shall be issued to meet the expenses incurred by these improvements, and in what sum. The company believes that the extensions contemplated will put it on such a footing financially that the system will not only pay a reasonable dividend, but will remove the necessity for bond issues for improvements in the future.

Pumping Station.—The Scofield Engineering Company, Arcade Building, Philadelphia, Pa., has been retained as consulting engineers by the Millard Construction Company, of Philadelphia, in connection with the contract for the erection of the Seventh street and Lehigh avenue high-pressure pumping station for the city of Philadelphia. Construction will begin immediately.

Ozone Purification of Water.—The United Water Improvement Company, Philadelphia, Pa., owning the patents of the J. Howard Bridge system of water purification has installed a miniature apparatus for purposes of demonstration, in the office of a coal company in Lynn, Mass. The apparatus occupies a floor space of 3 by 2 feet.

Wire Cut Paving Brick.—The process of manufacturing wire cut paving brick invented by Frank B. Dunn, Conneaut, O., mentioned in the "Municipal Journal and Engineer" March 3, is designed as an improvement in the process of manufacturing lug brick to be laid in the ordinary way, the projections acting as spacers to keep the bricks apart. The use of the bricks in interlocking, as mentioned in the item referred to, is an interesting possibility, but not the principal object of the invention.

Garbage Company.—At a meeting of the People's Garbage and Fertilizer Company, held at Johnstown, Pa., March 5, directors and officers were elected as follows: President, George McGeary; Vice-President, Harry A. Hoffman; Secretary and Treasurer, Louis H. Opperman. The other directors are S. W. Roudabush and Joseph K. Love. The plant in the Seventh Ward has been remodeled and is now considered fireproof.

Cement Plant.—A deal has been closed through which the Alpha Portland Cement Company becomes the owner of the Manheim, W. Va., plant of the Buckhorn Portland Cement Company. The price was \$500,000. The purchasing company will expend \$250,000 in improvements. The plant, which has been idle for several years, will be started up at once. When the improvements are completed it will have a capacity of 3,000 barrels a day.

Hoisting Engines.—The Lambert Hoisting Engine Company, 117 Poinier street, Newark, N. J., has the contract for four semi-portable hoisting and excavating machines to be used in the construction of sewers in the city of Havana, Cuba.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage
Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation
Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Ohio.....	Cleveland.....	Mar. 18, noon.....	Relaying and repairing cement and stone sidewalks for year.....	W. J. Springborn, Pres. Bd. Pub. Ser.
New York.....	Geneva.....	Mar. 18, 7:30 p.m.....	Paving, brick, asphalt, block, etc., 14,000 sq. yds.; excav. 6,500 cu. yds.; curb, 9,000 lin. ft.; sewer tile, 4,245 lin. ft.....	C. T. Church, City Engineer.
Saskatchewan.....	Prince Albert.....	Mar. 18, 8 p.m.....	Furn. stone crusher, elevator, screens, motor and road roller.....	F. A. Creighton, City Engineer.
Indiana.....	Tipton.....	Mar. 19, 11 a.m.....	Bldg. Park gravel road, bet. Tipton and Madison counties.....	J. F. Barlow, County Auditor.
New York.....	Kingston.....	Mar. 19, 7:30 p.m.....	Paving vit. brick, first quality, block size, 53,500 sq. yds. 4 sts.; regulating, resetting curb, etc.....	Dayton Murray, City Clerk.
New York.....	Troy.....	Mar. 19, 11 a.m.....	Furn. material and paving portion of Drew St.....	Jas. M. Riley, Sec'y Bd. Cont. & Sup.
Ohio.....	Hamilton.....	Mar. 20, noon.....	Cement sidewalks, grading, graveing, etc., sundry sts.....	Chr. Pabst, Sec'y Bd. Pub. Service.
Ohio.....	Youngstown.....	Mar. 20, 1:30 p.m.....	Furn. material and turnpiking 26,700 ft. road, Aust. twp.....	Comrs. Road. Dist., Dollar Bk. Bldg.
Illinois.....	Chicago.....	Mar. 20, 11 a.m.....	Furn. and delivering A. F. Shuman's composite wood and asphalt pavement, or one as good for bridges and viaducts in city during 1909.....	John J. Hanberg, Com'r Pub. Wks.
Michigan.....	Muskegon.....	Mar. 20.....	Furn. crushed lime or field stone, where specified.....	John B. Barlow, Clk. Co. Rd. Com'rs.
Wisconsin.....	Racine.....	Mar. 20, 10 a.m.....	Paving Main and Marquette streets.....	H. P. Connolly, Chm. Bd. Pub. Wks.
Ohio.....	Cleveland.....	Mar. 20, 11 a.m.....	Grading, draining and improving Northfield road.....	A. B. Lea, County Surveyor.
Ohio.....	Ravenna.....	Mar. 22, noon.....	Paving 12,228 sq. yds.; curb 6,214 ft.; 10-18-in. sewer, 3,810 ft.....	E. W. Marvin, Village Clerk.
Ohio.....	Barberton.....	Mar. 22.....	Paving 14,300 sq. yds.; H. W. Alcorn, Village Engineer.....	L. C. Dibble, Village Clerk.
Texas.....	Paris.....	Mar. 22.....	Paving work to cost \$15,000 to \$25,000.....	O. B. McKnight, City Secretary.
Ohio.....	Jefferson.....	Mar. 22, 1 p.m.....	Grading and macadamizing 3.8 miles of road, New Lyme twp.....	J. S. Matson, County Surveyor.
California.....	Los Angeles.....	Mar. 22, 2 p.m.....	Cement curb and gutter, wooden catch-basins, etc., E. Whit. Dist.....	C. G. Keyes, County Clerk.
Pennsylvania.....	Etna.....	Mar. 22, 5 p.m.....	Grading, paving and curbing High St., brick or stone block.....	J. C. Armstrong, Boro. Clerk.
Michigan.....	Mason.....	Mar. 22, 7 p.m.....	Brick paving, 5,600 sq. yds., combined curb and gutter, etc.....	City Clerk.
Missouri.....	Carthage.....	Mar. 22, 8 p.m.....	Grading Orchard and contiguous sts.; also macadamizing.....	W. G. Fasken, Street Commissioner.
Kentucky.....	Louisville.....	Mar. 22, noon.....	Constructing and re-constructing \$175,000 worth of asphalt work.....	Alex. G. Barrett, Chm. Bd. Pub. Wks.
Iowa.....	Sioux City.....	Mar. 23.....	Brick block paving 20,000 sq. yds. on Fourth St.....	G. Y. Skeels, City Engineer.
Kansas.....	Manhattan.....	Mar. 23, noon.....	Bldg. 12,000 lin. ft. cement curbing.....	H. W. Hungerford, City Clerk.
Wisconsin.....	Beloit.....	Mar. 23, 10 a.m.....	Reblocking Central Bridge.....	J. L. Hendley, Chm. Bd. Pub. Wks.
Virginia.....	Portsmouth.....	Mar. 23, 8 p.m.....	Furnishing 10-ton steam road roller.....	S. T. Montague, Clk. Street Com.
Wyoming.....	Ft. D. A. Russell.....	Mar. 23, 9:30 p.m.....	Bldg. 55,407 sq. ft. concrete or stone sidewalks, also 15,570 sq. yds. roadway.....	Capt. V. K. Hart, Q.-M.
Pennsylvania.....	Pittsburg.....	Mar. 23, noon.....	Furn. 70,000 tons ballast and screenings, also 250,000 ft. b. m., white oak road plank for improved roads.....	R. J. Cunningham, Co. Controller.
Connecticut.....	Bridgeport.....	Mar. 26, 8 p.m.....	Brick or wood block paving and 23,580 sq. yds.; 3,620 cu. yds. sand; 5,620 tons crushed stone; 4,325 bbls. Portland cement.....	M. F. McKenna, City Engineer.
Ohio.....	Cincinnati.....	Mar. 26, noon.....	Improving Vaughn road from city line to Andrew Ave.....	Stanley Struble, Pres. Co. Comrs.
Ohio.....	St. Bernard.....	Mar. 26, noon.....	Grading, macadamizing, concrete curb and gutter, etc., 2 sts.....	J. A. Stewart, C.E., Trac'n Bldg. Cin.
Ohio.....	Youngstown.....	Mar. 27, 1:30 p.m.....	Improving and turnpiking 9,007 lin. ft. Bears Den road, Sec. No. 1.....	Comrs. Road Dist., Dollar Bk. Bldg.
Georgia.....	Savannah.....	Mar. 29, noon.....	Furn. f.o.b. cars or wharf Savannah, 22,000 lin. ft. straight and 2,000 ft. circular curb; 35,000 sq. yds. No. 1 vit. paving brick and 65,000 sq. yds. No. 1 asphalt paving block.....	Harry Willink, Dir. Pub. Wks. City Clerk.
Michigan.....	Menominee.....	Mar. 29.....	Paving and sewer work required during 1909.....	D. T. Davis, Co. Aud.
Ohio.....	Toledo.....	Mar. 29, 10 a.m.....	Repairing Stickney stone road 2,514 ft. long, Wash. twp.....	F. W. Toan, County Auditor.
Ohio.....	Bowling Green.....	Mar. 29, noon.....	Grading, draining, macadamizing 2 roads, 7 and 2 miles long.....	E. W. Sayles, City Engineer.
New York.....	Watertown.....	Mar. 30, 5 p.m.....	Bldg. 4,500 sq. yds. sandstone block, vit. brick or block on concrete; grading, sewers, culverts, curb, etc., 2 streets.....	Matthew Anderson, Chm. Twp. Trus.
Ohio.....	East Liverpool.....	Mar. 30, noon.....	Brick paving, 10,491 sq. yds.; 6,734 ft. 24-in. and 6,834 ft. 18-in. concrete curb, 4 catch basins, Lisbon road.....	Robt. G. Hilton, Clk. Co. Comrs.
Maryland.....	Rockville.....	Mar. 30, noon.....	Grading and macadamizing ¼-mile of road.....	Wm. Grant, City Engineer.
Nebraska.....	Lincoln.....	Mar. 30, noon.....	New brick paving 14,534 sq. yds., repaving 4,205 sq. yds.....	J. T. Maidlow, County Engineer.
Ohio.....	Ottawa.....	Mar. 31, noon.....	Bldg. stone roads in Palmer, Monroe and Van Buren townships.....	S. C. Jones, Clk. P. O. Box 334.
Pennsylvania.....	Oil City.....	Mar. 31.....	Brick paving, 21,900 sq. yds.; cement or stone curb, 8,950 ft.; excavation, 25,600 cu. yds. on W. First St.....	Wm. H. Mahoney, Clk. Bd. Pub. Serv.
Ohio.....	Springfield.....	Mar. 31, noon.....	Paving 29,000 sq. yds., any hard material, etc., Fountain Ave.....	A. E. Labagh, County Auditor.
Iowa.....	Fairfield.....	Mar. 31.....	Grading Cedar Hill, inc. 7,233 cu. yds. cut, 7,600 yd. fill, haul 350 to 400 yds., on Birmingham road.....	Ecudorian Legation, Wash., D. C.
Ecuador, S. A.....	Guayaquil.....	Apr. 1.....	Bldg. concrete sidewalks, macadam roads and sewers.....	Walter C. Murphy, Levee Board.
Louisiana.....	New Orleans.....	Apr. 1.....	Improvements on New Basin Canal and Shell road, including rebuilding levee; cost, \$105,000.....	Wm. J. Blake, City Engineer.
New York.....	Newburgh.....	Apr. 1, 5 p.m.....	Improving South West St.; cost, \$42,000.....	Theo. W. Peterson, City Auditor.
North Dakota.....	Aneta.....	Apr. 1, 6 p.m.....	Constructing cement sidewalks.....	Stanley Struble, Pres. Co. Comrs.
Ohio.....	Cincinnati.....	Apr. 2, noon.....	Improving Princeton pike; \$5,000 bond.....	Dennis B. Reardon, Clk. Bd. P. Wks.
New York.....	Little Falls.....	Apr. 2, 10 a.m.....	Paving, any hard material, 6,400 sq. yds., 2 streets.....	A. J. Driver, Jr., Probate Judge.
Alabama.....	Lafayette.....	Apr. 5.....	Grading preliminary to building road from city to Lancett.....	J. E. Merrill, County Auditor.
Ohio.....	Wauseon.....	Apr. 5, 11 a.m.....	Bldg. stone or gravel roads, etc., Roads No. 54, 58, 59 and 64.....	Wm. H. Nichols, County Auditor.
Indiana.....	Danville.....	Apr. 5, 10 a.m.....	Bldg. 15,565 ft. gravel road in Middle, and 12,145 ft. Center twp.....	Edw. G. Krahmer, County Auditor.
Minnesota.....	St. Paul.....	Apr. 5, 10 a.m.....	Improving Bald Eagle Lake Ave., macadam, etc.....	J. A. Guss, Jonesville.
Louisiana.....	Harrisonburg.....	Apr. 5, noon.....	Building 4 ½ miles road near Trinity.....	O. R. Stone, Clerk of Council.
Ohio.....	Berea.....	Apr. 5, noon.....	Grading, paving, curbing, draining, Beech St.....	M. G. Hann, County Auditor.
Indiana.....	Delphi.....	Apr. 5, noon.....	Grading, graveling or macadamizing, etc., certain roads.....	Geo. W. Cann, County Auditor.
Indiana.....	Logansport.....	Apr. 5, noon.....	Bldg. free gravel road in Tipton township.....	F. W. Toan, County Auditor.
Ohio.....	Bowling Green.....	Apr. 5, 1 p.m.....	Grading and macadamizing 2 roads, 6 ¼ and 8 1-3 miles long.....	Sam'l G. Ellis, County Auditor.
Indiana.....	Salem.....	Apr. 5, 1:30 p.m.....	Bldg. 2 roads; 13,357 and 21,587 ft. long.....	Gilbert C. White, C.E., Durham.
North Carolina.....	Graham.....	Apr. 5, 3 p.m.....	Bldg. 45 miles macadam roads; graded 28 ft. wide, pave 10 ft.....	B. B. Engle, County Auditor.
Indiana.....	Crawfordsville.....	Apr. 6, 10 a.m.....	Constructing Ham gravel road in Ripley township.....	John T. Scott, County Auditor.
Indiana.....	Vincennes.....	Apr. 6, 2 p.m.....	Constructing 6,070 ft. gravel road in Vigo township.....	L. S. Creed, Village Clerk.
Ohio.....	Struthers.....	Apr. 6.....	Furn. material and bldg. sidewalks, gutters, and intersect, in 1909.....	J. P. Noftzger, County Auditor.
Indiana.....	Wabash.....	Apr. 6, 1 p.m.....	Improving highway.....	J. D. Kramer, City Clerk.
Kansas.....	Independence.....	Apr. 7, 8 p.m.....	Brick paving 42,000 sq. yds. five streets; 18,550 ft. concrete curb and gutter; 9,500 cu. yds. earth and 550 cu. yds. rock excav.....	Geo. W. Cann, County Auditor.
Indiana.....	Logansport.....	Apr. 8, noon.....	Constructing 5,280 ft. macadamized road in Jackson twp.....	D. J. Aller, City Clerk.
Wisconsin.....	Tomah.....	Apr. 16, 1 p.m.....	Constructing brick pavements.....	
WATER SUPPLY				
Oklahoma.....	Tonkawa.....	Mar. 18.....	Furn. material and extending w. w. and bldg. electric light system; entire or separate, inc. c. i. pipe and castings, hydrants and valves, 300-gal. triplex power pump and motor, switch-board, etc.....	C. E. Hazlewood, City Clerk.
Tennessee.....	Nashville.....	Mar. 18, 3 p.m.....	Laying 24,230 ft. 6-in. and 1,500 ft. 12-in. pipe; various streets.....	Board of Public Works.
Alabama.....	Port Dade.....	Mar. 18, 8 p.m.....	Constructing two cypress tanks at post.....	Constructing Quartermaster, U.S.A.
New York.....	New York.....	Mar. 18, 11 a.m.....	Bldg. Wallkill Siphon, deep-pressure tunnel in rock, 14 ½ ft. diam, 23,400 ft. long, crossing under Wallkill River, 6 shafts, 350 to 480 ft. deep, adjacent grade tunnels and concrete cut-and-cover aqueduct.....	Board of Water Supply.
Massachusetts.....	Boston.....	Mar. 19, 10 a.m.....	Extensions to water and sewer systems at Fort Andrew.....	Capt. R. H. Rolfe, 263 Summer St.
Minnesota.....	Jackson.....	Mar. 19, 8 p.m.....	Remov. old water tower; bldg. 100,000-gal. steel tank and tower.....	J. G. Robertson, Village Clerk.

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
WATER SUPPLY—Continued				
New Brunswick	Moncton	Mar. 20	Furnishing electric turbine pumps; time extension	City Council.
Wisconsin	Black River Falls	Mar. 20, 8 p.m.	Laying water mains	Geo. T. Hensall, Chm. Wtr. Com.
California	Yuba City	Mar. 22	Pumping plant and station bldg. for municipal water system	Engr. McMurtry, Care Bd. City Trus.
New York	New York	Mar. 22, 11 a.m.	Bldg. Turkey Mountain grade tunnel, 1,400 ft. long, 17x13 1-3 ft. on hydraulic gradient; also Croton Lake pressure tunnel, crossing under Croton Lake, 14 ft. diam. 2,600 ft. long, two shafts, 510 and 560 ft. deep; blow-off tunnel, 400 ft. long; 3 sections, 2,000 ft. cut-and-cover, 17x17 1/2 ft. in Yorktown	John A. Benschel, Pres. Bd. Wtr. Sup. H. E. Gillis, City Clerk.
Alberta	Calgary	Mar. 22, 4 p.m.	Furn. 41,140 lin. ft. 6-in. and 5,000 ft. 12-in. water pipe	A. M. Royston, Clk. Bd. Pub. Affrs.
Ohio	Barberton	Mar. 23, noon	Extend. w. w. system; 429 tons c. i. pipe; 41 hydrants, etc.	B. C. Brandstadt, Sec'y Bd. Local Im.
Illinois	Oak Park	Mar. 23, 10 a.m.	Bldg. connecting system, 19 miles 6 to 12-in. c. i. main, etc.	Willis Chipman, C.E., Toronto.
Ontario	Burlington	Mar. 23, 8 p.m.	Pipe laying, pump house, water tower, c. i. pipe, hydrants, valves, electrically operated pump machinery, pump well	M. Cooke, Eng. & Const. Co., Joplin, Mo.
Oklahoma	Prague	Mar. 23, 7 p.m.	Furn. material for water and light plant, inc. tower and tank, motor driven deep well pumps, inc. motors; boilers, steel stack, feed pumps, etc.; c. i. pipe, valves, hydrants, etc.	Edward Elbert, Pres. Water Bd.
Pennsylvania	Reading	Mar. 23	Furn. c. i. pipe and specials; gate boxes, cocks, hydrants, etc.	Dodge & Day, Engrs., Washington Bldg., Philadelphia, Pa.
Maryland	Berlin	Mar. 25, 2 p.m.	Bldg. water works and electric light system, inc. water dis. system, 500-gal. duplex pump, piping, etc. 12x125 ft. stand pipe, 3 and 8-in. wells, not over 100 ft. deep, etc.	Board of Water Supply.
New York	New York	Mar. 25, 11 a.m.	Bldg. 2 1/2 miles concrete aqueduct, 17x17 1/2 ft. diam.	George T. Baggs, Town Clerk.
Montana	Stevensville	Mar. 25, 5 p.m.	Bldg. w. w. system, inc. 10,800 ft. 6-in., 10,650 ft. 4-in., 11,700 ft. 8-in. wire-wound wooden pipe, 23 hydrants, small reservoir, check, \$1,000; J. H. Kyd, C.E., Butte	A. N. Russell, Sec'y Bd. Wtr. Comrs.
New York	Ilion	Mar. 25	Constructing puddle trench, 300 ft. long, 6 to 40 ft. deep, with wall 4 ft. thick at Reservoir No. 2, 2 1/2 miles from village	Truman West, Mayor.
Maryland	Oakland	Mar. 29	Construct w. w. system; Penniman & Fairley, C.E., Baltimore	Morgan Caraway, City Clerk.
Oklahoma	Muskogee	Mar. 29, 5 p.m.	Furn. 4,000,000-gal. high and 5,000,000-gal. low service pump and 250 h.-p. tubular boiler; L. B. Kinsey, Engineer	John A. Benschel, Pres. Bd. Wtr. Sup.
New York	New York	Mar. 30, 11 a.m.	Bldg. 2 tunnels, 3,600 & 700 ft. long, 17x13 1-3 ft., also 13,200 ft. plain concrete aqueduct, 17x17 1/2 ft. Westchester Co.	R. P. Moore, Village Clerk.
Nebraska	Litchfield	Apr. 1	Constructing \$10,500 water works	W. L. Doyle, Village Clerk.
Michigan	Elkhart	Apr. 1, 7 p.m.	Bldg. w. w. system, complete; engine, pump, tank, pipes, etc.	P. D. Hendershot, City Clerk.
Wisconsin	Platteville	Apr. 2, 7:30 p.m.	Furn. and install. pumping systems, for 2 wells, air lift apparatus, deep well turbine pumps, driven by steam engines or steam turbines, and deep well power pumps, steam driven	Bron. H. Barnett, Pres. W.W. Trus.
Florida	Jacksonville	Apr. 5, 3 p.m.	Furn. 2 motor-driven cent. pumps, 2,000-gal. per min. each, against pressure at discharge of 175 lbs.; alt. bids for 2 pumps of 2,500-gal. each	C. C. Carlisle, City Engineer.
Wyoming	Cheyenne	Apr. 5, 2 p.m.	Furn. 10,000 tons c. i. pipe; 200 tons pig lead; 15 tons jute oakum, all f.o.b. Omaha, or other Union Pac. Ry. points	Bd. Water Supply, 299 B'way.
New York	New York	Apr. 6, 11 a.m.	Contracts 17 and 18; 14,000 and 15,600 ft. plain concrete conduit, 17x17 1/2 ft. cut-and-cover aqueduct, in Ulster and Orange Counties	Hamilton Johnson, City Engineer.
Mississippi	Jackson	Apr. 6, noon	Furn. 6,000,000-gal. high duty pumping engine	Lund & Hill, Engrs., Little Rock
Arkansas	Lake Village	Apr. 6	Brick power house and pump pit; 300-gal. power pump, 30 hp. gasoline engine, etc.; 50,000 gal. steel tank on 1 1/2 ft. tower; 3 miles 4 to 8 in. mains, hydrants, valves, etc.	Geo. G. Earl, Supt. Sew. & Wtr. Bd.
Louisiana	New Orleans	Apr. 6, 3 p.m.	Furnishing water meters and meter boxes	Samuel Murray, Sec'y-Treasurer.
Saskatchewan	Weyburn	Apr. 7, 8 p.m.	Pipe laying, water tower, c. i. pipe, hydrants, and valves	Reynold Voit, Sec'y Bd. Pub. Serv.
Ohio	Toledo	Apr. 8	Furn. f.o.b. cars iron pipe, specials, valves, sluice gates, etc.	R. Sutton, City Clerk.
Wisconsin	Richland Center	April 9	Furn. and laying 5,000 ft. 8 & 10 in. c. i. pipe; furn. specials, valves & hydrants; W. G. Kirchoffer, C. E., Madison	B. L. Burnett, Pres. Bd. Wks.
Indiana	Shirley	Apr. 15	Constructing \$25,000 water works system	W. H. Elliot, Town Clerk.
Ontario	Fort Francis	Apr. 15, 8 p.m.	Furn. material and bldg. water and sewerage works	John A. Benschel, Pres. Bd. Wtr. Sup.
New York	New York	Apr. 16, 11 a.m.	Bldg. Sections 17 and 18 of Catskill aqueduct	City Clerk.
California	Petaluma	May 5, 7 p.m.	Furn. and install. pump. mach. for salt-water high-pressure sys.	
SEWERAGE				
Ohio	Cleveland	Mar. 18, noon	Bldg. sewers in various sts., aves. and courts	E. H. McIntosh, Sec'y Bd. Pub. Serv.
Oklahoma	Tonkawa	Mar. 18	Bldg. outfall and main sanitary sewerage system	Burns & McDonnell, Scarritt Bldg., Kansas City, Mo.
Minnesota	St. Paul	Mar. 18, 2 p.m.	Bldg. Portland-Aldine system of sewers	M. J. McMahon, Clk. Bd. Pub. Wks.
Illinois	River Forest	Mar. 18, 8 p.m.	Bldg. Hamlin av. pipe sewer, \$2,625; No. Franklin ave. \$2,968	Eng. Room 820, 84 LaSalle st., Chicago
New Jersey	Red Bank	Mar. 19, 4:30 p.m.	Bldg. sewer along Maple Ave. for 4 city blocks	A. C. Harrison, Borough Clerk.
Ohio	Dayton	Mar. 19	Bldg. san. sewers, Dist. 4; 22,265 ft. 8-in.; 5,555 ft. 10-in.; 1,100 ft. 12-in. vit. pipe; 75 manholes; 40 lamp holes; 27 flush tanks	W. A. Budroe, Clk. Bd. Pub. Serv.
Oklahoma	Kingfisher	Mar. 19	Furn. material and bldg. main sanitary sewer No. 1	Edw. Ingram, City Clerk.
Kentucky	Louisville	Mar. 19, noon	Bldg. Sec. A, Middle Park trunk sewer, Cont. No. 28, inc. 3,500 ft. 34 and 79-in. concrete sewer, 1,600 ft. in tunnel, partly in rock and inc. 800 cu. yds. concrete; H. P. Eddy, C.E., Boston	W. C. Nones, Chm. Sewer Com.
Massachusetts	Boston	Mar. 19, 10 a.m.	Bldg. sewerage system, Ft. Banks; extend system, Ft. Andrews	Capt. R. H. Rolfe, 263 Summer St.
Iowa	Des Moines	Mar. 19, 10 a.m.	Bldg. 12-in. pipe sewer in W. 43d, 10-in., E. 9th St.	Geo. F. Poorman, City Clerk
Illinois	Stonington	Mar. 20, 10 a.m.	Furn. haul and distributing drain tile, inc. concrete pipe	Sylvester Scrantz, Drainage Comr.
Virginia	Roanoke	Mar. 20, noon	Bldg. 20-in. d. s. t. c. storm drain in Gainsborough road	W. B. Bates, City Engineer.
Alberta	Calgary	Mar. 22, 4 p.m.	Furn. 82,000 ft. 4 to 30-in. sewer pipe	H. E. Gillis, City Clerk.
Nebraska	Wayne	Mar. 22, 8 p.m.	Constructing sanitary sewer system	Martin Ringer, City Clerk.
Kansas	Washington	Mar. 22	Constructing sewer system; Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers	M. O. Rutzel, City Clerk.
North Dakota	Williston	Mar. 22, 8 p.m.	Furn. mat. and bldg. sanitary sewer system, inc. 1,123 ft. 22-in.; 744 ft. 20-in.; 793 ft. 12-in.; 1,278 ft. 10-in.; 1,015 ft. 8-in.; 14 manholes and concrete outfall	Will. T. Poe, City Auditor.
Kansas	Marion	Mar. 22, 7 p.m.	Constructing septic sewage disposal tank	Thos. W. Bown, City Clerk.
Ohio	Toledo	Mar. 23	Rebldg. sewer No. 25	Reynold Voit, Sec'y Bd. Pub. Serv.
Ohio	Eaton	Mar. 24, noon	Bldg. complete sewage disposal plant, inc. filter beds, concrete tanks, excav., embankments, controlling house and mach.	A. L. Reid, Village Engineer.
Illinois	Chicago	Mar. 24	Furn. sewer pipe, cement, sand and other supplies for 3 months	Bd. Inspectors, House Correction.
Virginia	Winchester	Mar. 25, noon	Bldg. sanitary sewer system with intermittent filtration plant, 50,000 bonds for 8 miles of sewers and filter plant	Shirley Carter, Chm. Sewer Com.
Minnesota	Elbow Lake	Mar. 27, 1:50 p.m.	Laying 3,000 ft. 10 and 12-in. tile; also excavating 1,067 cu. yds.	O. E. Wold, County Auditor.
Indiana	Port Wayne	Mar. 27, 7:30 p.m.	Constructing two vitrified pipe sewers	H. W. Becker, Clk. Bd. Pub. Works.
Ohio	St. Bernard	Mar. 26, noon	Material and labor for bldg. sewer in Kemper and Jackson aves.	Geo. Schroeder, Village Clerk.
Kentucky	Louisville	Mar. 26, noon	Bldg. Sec. G. So. Outfall sewer; Con. 29; rein. concrete sewer 10 ft., 7 ft. 8-in., and 7 ft. drain, 4,061 ft. long; 16 to 33 ft. deep, inc., 3,700 cu. yds. concrete and 300,000 lbs. steel	J. B. F. Breed, Ch. Engr. Sew. Co.
Ohio	Lockland	Mar. 29, noon	Bldg. sewage disposal plant, inc. pump house, well and screen chamber, machinery, etc., settling tank, sludge bed and all drainage, sewers, grading, etc.; also bldg 2 undercrossings at canal	C. E. Troy, Village Clerk
Kansas	Clay Center	Mar. 29, 7:30 p.m.	Constructing main sewers	Guy R. Martin, City Clerk.
Indiana	Angola	Mar. 29, 7:30 p.m.	Bldg. main sewer and sewage disposal plant	R. L. Sackett, C. E., Lafayette.
New York	Watertown	Mar. 30, 5 p.m.	Bldg. 9,000 ft. 27-36-in. vit. tile sewer, in concrete, or rein. conc.	E. W. Sayles, City Engineer.
Iowa	Des Moines	Mar. 31	Furn. sewer drain and clay pipe, cement, brick, etc.	Geo. F. Poorman, City Clerk.
Iowa	Sec. City	Mar. 31	Furnishing sewer and drain pipe	J. S. Shannon, City Clerk.
Ecuador, S. A.	Quayaquil	Apr. 1	Constructing re-inforced concrete sewers, sidewalks, etc.	Ecuadorian Legation, Wash., D. C.
New Jersey	Millville	Apr. 2, 7:30 p.m.	Bldg. sewage disposal plant; \$2,000 check	Charles B. Neal, Chm. Sewer Com.
Michigan	Muskegon	Apr. 5, noon	Bldg. sanitary sewers, Dist. 6; cost, \$12,235	Benj. H. Tellman, County Recorder
Georgia	Cedartown	Apr. 6	Constructing 2 miles of sewers; S. S. Evans, City Engr.	J. B. Lacy, Street Commissioner.
Maryland	Baltimore	Apr. 7, 11 a.m.	Bldg. sanitary sewers; Contracts 38 and 39; \$2,500 and \$2,000 checks	J. Thomas Sewell, City Register.
Ontario	Fort Francis	Apr. 15, 8 p.m.	Furn. material and bldg. sewerage and water works	W. H. Elliot, Town Clerk.
Alabama	Birmingham	Apr. 21	Bldg. brick and concrete sewers, 7 sections, to cost about \$200,000; old bids, given Feb. 24 issue, rejected	Maury Nicholson, City Engineer.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES				
Ohio	Dayton	Mar. 18, 11 a.m.	Bridge material and repair of damage done by flood	H. R. Klepinger, Co. Engr.
Nebraska	Nebraska City	Mar. 18, noon	Constructing steel and wooden bridges during 1909	A. P. Young, County Clerk.
Nebraska	Madison	Mar. 19, noon	Bldg. 70-ft. span steel bridge, tubular piers, 16-ft. rdwy; also all other such bridges up to 80 ft. during year	Geo. E. Richardson, City Clerk.
Indiana	Greenfield	Mar. 20, 10 a.m.	Bldg. Binford bridge in Blue River township	Charles H. Troy, County Auditor
Illinois	Chicago	Mar. 20, 11 a.m.	Removing old and driving new piling, etc.	John J. Hanberg, Com. Pub. Wks.
Pennsylvania	Pottsville	Mar. 22, 10 a.m.	Bldg. steel bridge over Schuylkill river at Palo Alto	Chas. T. Strauhn, Co. Controller.
Kansas	Hutchinson	Mar. 22	Bldg. double arch over Cow Creek at Main St.	T. G. Elbury, City Engineer.
Illinois	Chicago	Mar. 24, noon	Bldg. sub. and erecting only, superstructure of bridge, Devondu	I. J. Bryan, Clk. Sanitary Dist.
South Carolina	Camden	Mar. 25, noon	Bldg. bridge over Wateree river, inc. 2 concrete abutments; 1 concrete pier and 2 steel spans, 375 and 130 ft. long; \$25,000	M. C. West, County Supervisor.
Ohio	Dayton	Mar. 25, 11 a.m.	Bldg. sub. and superstructure bridge over Crk. Madison twp.	T. J. Kauffman, County Auditor.
Ohio	Cleveland	Mar. 27, 11 a.m.	Bldg. concrete culvert Olmstead twp.; report No. 3,235	A. B. Lea, County Surveyor.
Ohio	Toledo	Mar. 29, 10 a.m.	Bldg. approaches to Ten-Mile Creek at Stickney Ave.	D. T. Davis, County Auditor.
Ohio	Hamilton	Mar. 30, 10 a.m.	Labor and material for substructure and bridge in Reily twp.	J. E. Brate, County Auditor.
Kansas	Westmoreland	Apr. 1, 2 p.m.	Bldg. 300 ft. steel approach to Stockdale bridge	H. G. Huckstadt, County Clerk.
Ohio	Cleveland	Apr. 3, 11 a.m.	Sub. and paving, est. \$210,447; steel work, \$456,750, Co. bridge	A. B. Lea, County Surveyor.
Florida	Starke	Apr. 5	Bldg. steel bridge, 1226 ft. long over New river, nr. Lake Butler	C. L. Peek, Chm. Bd. Co. Comrs. County Auditors.
Ohio	Batavia	Apr. 5 noon	Bldg. concrete arch culvert at Boston; cost, \$1,225	W. C. Vaughn, Clk. Co. Supervisors.
Mississippi	Magnolia	Apr. 5	Bldg. bridge over Bogue Chitto river	Fred. C. Werner, Chm. Bd. Pub. Wks.
Wisconsin	Watertown	Apr. 5, 2 p.m.	Bldg. rein. concrete girder bridge and abutments, Silver Crk.	C. H. Lockwood, Twp. Clerk, Mt. F. Bridges.
Ontario	Glen Oak	Apr. 5	Bldg. rein. concrete bridge at Caradoc	R. L. Holt, Chm. County Comrs.
North Carolina	Graham	Apr. 5, 3 p.m.	Bldg. 14 short rein. concrete bridges; 45 miles macadam road, etc.	H. W. Bethard, Clk. Police Jury.
Louisiana	Harrisonburg	Apr. 5, noon	Bldg. steel bridge at Bushley Bayou; also repairing one	H. M. Sharp, County Surveyor.
Ohio	Bryan	Apr. 6, 11 a.m.	Bldg. 8 steel bridges, 150 to 40-ft. spans; cost, \$5,798 to \$1,127; also 6 small concrete bridges, spans 12 to 25 ft.	H. D. Chaffin, County Auditor.
Ohio	Washington, C.H.	Apr. 6, 2 p.m.	Constructing bridges in various parts of County	T. H. Tabor, Ordinary, Gilmer Co.
Georgia	Ellijay	Apr. 6	Bldg. double-track steel bridge, 1 span, 102 ft. long; also for 2 stone and cement piers on 30-in steel tubular piers	F. N. Lentz, County Auditor.
Iowa	New Hampton	Apr. 6, 1 p.m.	Constructing 10 concrete bridges: bids whole or separate	A. B. Lea, County Surveyor.
Ohio	Cleveland	Apr. 7, 11 a.m.	Constructing concrete arch on Barrett road	Geo. H. Hungerford, County Clerk.
Kansas	Manhattan	Apr. 8 noon	Bldg. steel bridge over Fancy Creek, Centre township	John Morrissy, Dept. Pub. Wks.
New Brunswick	Fredericton	Apr. 25	Bldg. 4 metal spans, each 260 ft. long, pin-connection	
LIGHTING AND ELECTRICITY				
Iowa	Burlington	Mar. 18	Furn. three 150 h.-p. water tube boilers, set up complete; power house and 54-in. x 125-ft. brick or tile chimney; underground distribution system to 3 schools	D. S. Cooper, Sec'y Bd. Education.
New York	West Point	Mar. 19, noon	Furn. 70, 80 or 90 h.-p. engine, using crude or solar oils	Ben. Boon, Supt. Water & Light.
Oklahoma	Marlow	Mar. 20	Lighting streets for terms of 5 and 10 years	John W. Davis, Sec'y Boro. Council.
Pennsylvania	Lansdowne	Mar. 20, 8 p.m.	Furnishing electrical supplies, etc., for Bur. Eng. & Printing	Joseph E. Ralph, Dir. B. E. & P.
Ohio	Washington	Mar. 22	Lighting sts., etc., for 10 years, begin. 5 mos. from date of Cont.	C. W. Van Nest, Clk. Bd. Pub. Serv.
California	Pasadena	Mar. 23	Furn. vert. comp. cond. engine, 750-800 k.w. turb-gen. unit with Terrell regulator and exciter and condenser, 750-800 k.w., 3-phase, 60-cycle, 2,300-volt engine, condenser, etc.	Heman Dyer, City Clerk.
South Carolina	Sumter	Mar. 23, noon	Furn. 50 enclosed incan. arc lights, 2,000 nom. c. p., all within one mile radius; all night service every night; also 50 to 80 add'l lights: 10-year contract from Nov. 1	C. M. Hurst, City Clerk.
Oklahoma	Prague	Mar. 23, 7 p.m.	Furn. material for electric light and water plant, inc. auto. steam engine, alternator, switchboard, arc lights, transmission lines etc.	F. M. Newhouse, Town Clerk.
Illinois	North Chicago	Mar. 24, noon	Outside lighting at naval training station, Great Lakes	Bur. Navigation, Navy Dept., Washington, D. C.
Maryland	Berlin	Mar. 25, 1 p.m.	Bldg. electric light plant and water works system, inc. poles, lines, wiring and street lamps; power plant bldg.: foundation for machinery, etc., equipment, inc. 100 h.-p. boiler, 50 k.w. generating unit, switchboard, piping, etc.	Orlando Harrison, Mayor.
Indiana	Ligonier	Mar. 25, 7 p.m.	Street lighting for a term of years; specifications on file	R. E. Jeanneret, City Clerk.
New York	New York	Mar. 27, 11 a.m.	Furn. and install. condens. equip. piping, etc., for 1,000 k.w. alternator	R. C. Hollyday, Navy Dept., Washington, D. C.
Michigan	Sault Ste Marie	Mar. 30, 3 p.m.	Bldg. superstructure movable dam, St. Mary's Falls Canal	Col. C. Mc. D. Townsend, U.S.A. Detroit
Iowa	Des Moines	Mar. 31	Furnishing electrical supplies, etc., to city	Geo. F. Poorman, City Clerk.
Kansas	Fort Riley	Apr. 2, 10 a.m.	Extensions to lighting system, inc. 5 transformers	Capt. W. M. Whitman, Q.-M.
California	Chico	Apr. 2	Sale of franchise for right to erect poles and wires for transmission and sale of electric power to city, and inhabitants for 50 years; Frank C. Wilson for Sierra Power Co., petitioner	Board of City Trustees.
California	Agnew	Apr. 7, 7 p.m.	Furn. and instal. conc. conduit, elec. wiring, etc., State Hospital	Bd. of Managers, Agnew State Hosp.
Virginia	Portsmouth	Apr. 13, 8 p.m.	Purchase of franchise and contract to light sts., public bldgs., residences, business, houses and for furn. required power	L. P. Slater, City Clerk.
Manitoba	Winnipeg	Apr. 15, 11 a.m.	Furn. 2 testing transformers, one 300 k.w., at 80,000 volts, and one 200 k.w. at 200,000 volts, and control equipment	F. E. Cambridge, City Electrician.
MISCELLANEOUS				
Pennsylvania	Easton	Mar. 22, 8 p.m.	Bldg. incinerator, 25 and 35 tons, for disposal of garbage, ashes etc.; only one plant to be erected; check, \$1,000	John McNeal, City Eng.
New Jersey	Plainfield	Mar. 22, 8 p.m.	Furn. combination chemical and hose wagon	Jas. T. MacMurray, City Clerk.
Massachusetts	Newton	Mar. 22, 2 p.m.	Collection & disposal of house offal for three years from May 1	Al. M. Russell, Clk. Bd. Health, W. Newton.
South Carolina	Sumter	Mar. 23, noon	Furn. 3,500-lb. hook and ladder truck, equipped with 150 ft. ladders, three 5-gal. chemical tank or 2 each of 3 and 5-gal. extinguishers, f.o.b. Sumter	C. M. Hurst, City Clerk.
Ohio	Toledo	Mar. 23	Furn. material and rebldg. and repairing wharf and sewer	Reynold Voit, Sec'y Bd. Pub. Serv.
Illinois	Chicago	Mar. 24, noon	Excavating a channel, 5,000 ft. long, 375,000 cu. yds. earth; bldg. sub. also superstructure only of bridge	I. J. Bryan, Clk. Sanitary Dist.
Massachusetts	Boston	Mar. 30, noon	Bldg. Section 1, tunnel under Beacon Hill; mainly concrete	B. Leighton Beal, Rapid Trans. Com.
New York	Albany	Mar. 31, noon	Barge canal Contracts 29, 32, and 36	F. C. Stevens, State Supt. Pub. Wks.
Wisconsin	Milwaukee	Mar. 31, 10:30 a.m.	Bldg. refuse incineration plant, complete, except superstructure of bldg. and chimney, as stated in Feb. 10 issue	Chas. J. Poetsch, Chm. Bd. Pub. Wks.
Dist. of Columbia	Washington	Mar. 31, noon	Furn. and placing riprap stone on sea-wall	J. J. Morrow, Major Engineers.
Iowa	Des Moines	Mar. 31	Furn. brick, cement, lumber, pipe, Fire Dept. supplies, etc.	Geo. F. Poorman, City Clerk.
Ohio	Columbus	Mar. 31, noon	Mach. and equip. for garbage reduction plant; Cont. No. 4	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Ohio	Lima	Mar. 31, 8 p.m.	Furnish and deliver aerial track	E. L. Kirk, Clk. Bd. Pub. Safety.
Iowa	Sac City	Mar. 31	Furnishing fire hose	J. S. Shannon, City Clerk.
Uruguay, S. A.	La Paloma	Apr. 2	Construction of harbor	Dept. of Pub. Wks., Montevideo.
Kansas	Lawrence	Apr. 5, 5 p.m.	Furn. material and bldg. bank protection on Elm St., furn. and driving 36 piles and 10,500 ft. b. m., wales and planking	F. D. Brooks, City Clerk.
Indiana	Lebanon	Apr. 5, 1 p.m.	Remodeling the County Jail	J. F. Herdrick, County Auditor.
Texas	Beaumont	Apr. 6, 10 a.m.	Bldg. wharf 700 ft. long for city to cost \$41,000	C. L. Scherer, City Engineer.
Tennessee	Chattanooga	Apr. 6	Steel, oak and mahogany furniture, fixtures, desks, files and shelving for new \$200,000 City Hall	H. F. Van Dusen, Chm. Bd. Pub. Wks.
Pennsylvania	Camp Hill	Apr. 6, 6 p.m.	Erecting new two-story fire house: K. Opperman, Architect	Geo. W. Kerr, Sec'y Fire Co. No. 1.
New York	New York	Apr. 15	Furn. petrol. motor hose wagon for Shanghai, China	Fearon, Daniel & Co., 69 Wall St.
Manitoba	Brandon	Apr. 16, 4 p.m.	Supplying 1,000 to 2,000 bbls. Portland cement for year	Harry Brown, City Clerk.
Ohio	Columbus	July 15, noon	Bldg. concrete retaining wall; Contract No. 18, inc. 860 cu. yds. excav. 765 cu. yds. loam, 1 acre seeding, 220 sq. yds. sodding, 800 cu. yds. concrete, 2,000 lbs. twisted steel rods	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Illinois	Chicago	Sept. 15	Furn. voting machines up to \$100,000 value	Election Commissioners.

STREET IMPROVEMENTS

Bessemer, Ala.—Plans have been prepared by City Engineer H. M. McNery, for paving the business section of the city; material has not been decided.

Ensley, Ala.—City will expend \$30,000 for street improvements on Avenue C, Oak street and Powell avenue.

Berkeley, Cal.—The Street Committee of the Town Trustees is considering plans for the macadamizing of the cross streets at Vine and Shattuck avenue, University and Shattuck avenue, Oxford and Centre, Telegraph and Bancroft street, Dwight way and Telegraph ave.

Sacramento, Cal.—Surveyor Phinney has submitted plans and specifications for the improvement of the Placerville road, distance 6 miles, cost \$33,000, and the Jackson road, distance 7 miles, cost \$45,370.

Sacramento, Cal.—The Legislature is considering a bill authorizing an \$18,000,000 bond issue for the construction of good roads.

San Bernardino, Cal.—Property owners will pave Sixth street from D to G streets.

San Jose, Cal.—The Board of Supervisors has received a petition for the widening of Glen Eyrie Lane in Road District No. 4.

South Pasadena, Cal.—Council is considering an ordinance in regard to preparing specifications for the oil tamping of the city streets and opening the way for a more permanent improvement of the city's thoroughfares.

Woodland, Cal.—The City Trustees are considering a resolution for the paving of Main, Court, College, First, Second, Third and Bush streets and alleys between Main and Lincoln and Main and Court streets.

Hartford, Conn.—The Finance Committee has appropriated \$350,000 for the use of the Street Department.

Washington, D. C.—Patriotic societies are aiding the proposed road from this city to Mt. Vernon; road will be macadamized with a right-of-way 60 feet wide.

Jacksonville, Fla.—The Board of Public Works has adopted resolutions for paving Myrtle avenue, Phelps, Clay, Beaver, Laura and other streets.

Jacksonville, Fla.—The Board of County Commissioners has adopted a resolution favoring a \$1,000,000 bond issue for good roads purposes.

St. Augustine, Fla.—The St. Augustine Board of Trade and the Business Men's League are considering the bonding of St. Johns County for at least \$150,000 for good roads.

Tampa, Fla.—The Board of Public Works has submitted report on estimated cost of completing paving now under way, \$82,500; paving in annexed territory, \$50,000, and paving in old city limits, \$22,500.

Athens, Ga.—The Street Committee has recommended the paving of Jackson street with Belgian block; estimated cost, \$12,110.

Augusta, Ga.—The construction of a boulevard from the Hamburg end of the old Center street bridge, three miles long and to cost approximately \$5,000, will be begun within a short time and will be finished by the early fall. Mr. W. B. Brigham, Mr. L. C. Hayne and several other prominent members of the Schultz Hill Township Agricultural Club are fostering the plan for the boulevard.

Dawson, Ga.—City will purchase rock crusher and roller.—F. McNulty.

Valdosta, Ga.—Citizens will vote April 14 on \$60,000 improvement bonds; \$20,000 of this is for sidewalk paving; 10 or 15 miles of sidewalks will be laid in principal streets.

Quitman, Ga.—Citizens are considering street improvements.

Savannah, Ga.—Paulsen and Harmon streets will be paved; the improvement of West Broad street is also being considered.

Grangeville, Ida.—The Legislature is considering a bill authorizing a \$75,000 appropriation for the construction of a wagon road through the Forest Reserve.

Aurora, Ill.—Council is considering the widening of Sheridan street and the graveling of Grove and Spencer streets.

Quincy, Ill.—City Engineer Hancock has estimated the cost of resurfacing Jefferson street at \$262.50; repairing Lind street, \$136.50; concrete gutters on Vine street, \$137.60; Lind, \$136.90.

Rochelle, Ill.—City will lay 14 blocks of brick paving early this season; Engineer not selected.—W. B. McHenry, Chairman of Board of Local Improvements.

Evansville, Ind.—The Park Commissioners are considering the construction of a 15-foot promenade of concrete along the river front of Sunset Park.

Evansville, Ind.—The Board of Public Works are considering the improvement of Franklin street and more streets in the factory districts.

Greenfield, Ind.—Bids will be received by Charles H. Troy, Auditor, Hancock County, for the construction of a macadamized road in Buckcreek township.

Indianapolis, Ind.—The Board of Public Works has ordered plans for the paving of Ceyton street with brick.

Indianapolis, Ind.—The Board of Public Works has ordered the following improvements: Bradley street, brick roadway; Bellevue avenue, brick gutters, and Twenty-fourth street, cement walks.

Morocco, Ind.—Surveys have been completed for 11½ miles of stone roads in McClellan and Colfax townships, Newton County.—W. H. Parker, Engineer.

Oxford, Ind.—Town Board has ordered profiles for an extensive sewer system.

Terre Haute, Ind.—Council is considering the paving of Thirteenth, Popular, Hulman, Sycamore, Spruce, Eighth and Crawford streets and Wabash avenue with brick, 2-inch sand cushion, Portland filler and 6-inch base; distance 3¾ miles.—C. B. Schmidt, City Engineer.

Vincennes, Ind.—The Board of Public Works is considering the improvement of Manila, Depot and Thirteenth streets.

Vincennes, Ind.—The Board of Works has adopted resolution for the improvement of Barnett street, with concrete sidewalks and stone curbing.

Bradford, Ia.—City is considering the paving of a number of streets.

Burlington, Ia.—City is considering a paving of Madison Avenue, Grove and South streets.

Cresco, Ia.—City will lay curbing on various streets.

Davenport, Ia.—Council has rejected for grading Tenth, South, Davis and Thirteenth streets and McKinley avenue; new bids will be advertised for.—City Engineer Murray.

Davenport, Ia.—City will pave Ninth street from Third to Eighteenth avenue; cost of improvement, \$44,080.78; contract will be let at once.

Davenport, Ia.—Council has received petitions for the paving of several streets and the alley between High and Lombard, also for the grading of several streets.

Mason City, Ia.—City will receive bids shortly for brick paving in various streets.—J. H. McEwen, City Clerk.

Sioux City, Ia.—Council has ordered the placing of five miles of combined guttering and curbing.

Lawrence, Kan.—Council has ordered the paving of Connecticut street.—F. D. Brooks, City Clerk.

Lawrence, Kan.—Council has ordered the paving of Indiana and Pennsylvania avenues.—F. D. Brooks, City Clerk.

Lawrence, Kan.—Council has ordered the ordinance for the paving and curbing of New York street.

Leavenworth, Kan.—A resolution has been adopted for the repaving of Cherokee street.

Lexington, Ky.—The Board of Public Works is considering the paving of Ashland avenue.

Lexington, Ky.—Council is considering an ordinance to purchase one car each of paving pitch and Portland cement for use in paving brick street.

Lexington, Ky.—The Board of Public Works has been authorized to purchase five cars of paving brick at a cost not exceeding \$19.50 per 1,000.

Lexington, Ky.—A petition is being circulated for the reconstruction of South Broadway.

Lexington, Ky.—Property owners on Vine street are considering the use of granite as material for paving that thoroughfare from Limestone to Broadway.

Lexington, Ky.—The Board of Public Works has recommended the reconstruction with brick of Short, Limestone and Main streets and Broadway.

Augusta, Me.—The Maine Central Railroad is considering the abolishment of grade crossings in the city.

Baltimore, Md.—Bids will be received March 17, 11 a. m. for the grading, paving and guttering with improved paving of Twenty-ninth street, Fourth and Chestnut avenues; also the grading and paving with improved or tarred macadam Walrad and London avenues.—Jas. N. Smith, President Commission for Opening Streets.

Baltimore, Md.—Council is considering the repaving of McMechen street, between Eutaw place and Mount Royal avenue.

Rockville, Md.—Montgomery County Commissioners have been petitioned by Bethesda district to call election on \$15,000 bond issue to construct road from Glen Echo to Woodmont, about three miles; bids will be opened March 30 for construction of mile of Shoemaker road from Four Corners to Blair road; also for a \$20,000 bond issue for construction of road from Potomac to Conduit road.

Lakeville, Mass.—Town has voted \$6,000 for macadamizing Pierce avenue.

Methuen, Mass.—Citizens have voted to macadamize Tenney street cost \$2,200; Quincy street, \$1,800; Boston street, \$500; Kirk street, \$1,000; sidewalk on Merrimack street, \$500, and grading and macadamizing Cross street.

Albert Lea, Minn.—Plans and specifications for paving Broadway with creosote blocks or brick will be presented to Council March 22; work requires 9,235 square yards of paving and 1,048 feet of concrete walks.—Wm. Banreck, City Engineer.

Duluth, Minn.—The Public Affairs Committee of the Commercial Club and private interests will be called upon to raise \$45,000 toward the paving of Garfield avenue.

Duluth, Minn.—A petition has been received by County Board for appropriation of \$1,000 for road work necessary to connect three roads running near together and making possible a short route between Alborn and Burnett.

Mesaba, Minn.—Town will issue \$15,000 for road purposes; roads to Spring Mine and to Aurora will be put in good condition.

Northfield, Minn.—County Board has appropriated \$4,500 for the improvement of Rice County roads.

St. Paul, Minn.—The Board of Public Works has rejected all bids for the grading of Vandalia street and Crotin avenue.

Corinth, Miss.—Citizens have voted \$9,000 bonds for street improvements.—J. P. Collier, Mayor.

McComb, Miss.—L. W. McDaniel will purchase an eight or ten-ton street or road steam roller; coal burner.

Scranton, Miss.—Jackson County Board of Supervisors has appropriated \$5,000 toward building shell road between Pascagoula and Moss Point; estimated cost, \$12,000.

Starkville, Miss.—Council has ordered nearly a mile of concrete sidewalks laid on Jackson street.

Vicksburg, Miss.—Citizens are considering paving of Cherry street.

Carthage, Mo.—Council has ordered the grading and graveling of Orchard street.

Rolla, Mo.—City will pave six blocks of Main street.—C. T. Starback, Mayor.

Omaha, Neb.—Council will issue \$100,000 bonds to carry on the work of paving intersections during the present year.

Atlantic City, N. J.—Council has decided to pave Arctic avenue with asphalt; cost, \$50,000.

Camden, N. J.—Council has directed the paving of Lemon street.—I. V. Bradley, Clerk.

Collingswood, N. J.—Delegations from the Borough Councils of Haddonfield and Collingswood and the Township Committee of Haddon township, the Board of Trade of Collingswood and the Stone Road Committee of the Board of Freeholders are considering the paving of the Haddonfield turnpike, which the County recently purchased, and also the question of establishing a boulevard.

East Orange, N. J.—Authority has been given by the Council for the execution of an agreement between the city and the Essex County Park Commission for the improvement of Park avenue in that city, which has been a bone of contention between the two bodies for years.

Flemington, N. J.—Residents of Raritan and Delaware townships are urging that the road between Flemington and Stockton be macadamized; distance, nine miles.

Harrison, N. J.—Council has decided to pave Warren street with bitulithic.

Long Branch, N. J.—The Street Committee will invite bids for furnishing gravel by the yard.

Madison, N. J.—Council is considering petition for sidewalks on Grove street.

Montclair, N. J.—Council is considering the widening and paving of various streets with Telford pavement.—Harry Trippett, Town Clerk.

Newark, N. J.—The Board of Freeholders is again considering the proposed widening and improvement of the Newark Plankroad and the construction of a new bridge over the Passaic River; work is to be done jointly by Hudson and Essex Counties, the latter to pay 62.5 per cent., and this county 37.5 per cent., less what the trolley company will pay.—T. J. Wasser, Engineer.

Newark, N. J.—The Road Committee of the Board of Freeholders is considering road improvements, cost about \$90,000; Telford pavement with liquid asphalt will be used.—James Owen, 196 Market street, County Engineer.

Newark, N. J.—The Board of Street and Water Commissioners has ordered the paving of Jelliff avenue, Maine street, Delavan avenue, Chestnut and Hunterdon streets.—M. R. Sherrerd, Chief Engineer.

Newark, N. J.—The Board of Street and Water Commissioners is considering the paving of Earl, Shipman, Cornfield, Arlington, Rector, Pierce, Hill, Thomas, Augusta and Parker streets, Comes alley, Chapel court and Nichols alley, Delancy, North Sixth, North Seventh and Grove streets, Chadwick, Hawthorne and Seymour avenues.—Wm. G. Greathead, Clerk of Board.

North Plainfield, N. J.—A petition from the residents of upper Somerset street and Watching avenue for the macadamizing of

those thoroughfares is being considered by Council.

Plainfield, N. J.—The State Road Department will thoroughly macadamize Sterling road, connecting this city with all parts of Somerset, Essex and other neighboring counties by way of the River road beyond Stirling; improvement will cost \$25,000; distance, 3½ miles.—State Road Supervisor R. A. Meeker.

Roswell, N. M.—City will pave seven blocks on Main street and three on Fifth street.

Albany, N. Y.—Senator Bayne, of the Rockland-Richmond district, has introduced in the Legislature a bill which appropriates \$100,000 to be used by the Commissioners of the Palisades Interstate Park to construct and maintain a driveway, to be known as the Henry Hudson drive, on the land acquired for the park, and with suitable approaches to the Hudson River and to the top of the Palisades; bill also gives the Commissioners power to co-operate with the Palisades Park Commissioners of New Jersey for the purpose of extending the road over the Palisades in the State of New Jersey.

Bergen, N. Y.—The Town Board and Highway Commissioner G. J. Snyder have agreed to set aside \$1,900 for pavement improvement of roads.

Brooklyn, N. Y.—The Board of Estimate has decided to pave with granite blocks a 30-foot strip on each side of the Flatbush avenue extension.

Niagara Falls, N. Y.—Council is considering the paving of Linwood avenue between Eleventh and Eighteenth streets; also a pavement in Ferry avenue.

Niagara Falls, N. Y.—The Industrial Commission has adopted the Sawyer Creek Route through Martinsville and Bligholtz, as recommended by Arthur A. Shurtleff, Landscape Architect, Boston, for the proposed Niagara Falls-Buffalo boulevard; State Legislature will be petitioned for permission to do the work.—Geo. F. Nye, Industrial Agent, Niagara Falls.

Syracuse, N. Y.—Council has ordered the paving of Orange street from Adams to Croton street.

Syracuse, N. Y.—Commissioner of Public Works Frank M. Westcott has estimated the cost of improving Belden avenue at \$42,350 for sandstone or creosoted wood block or \$36,625 with brick between tracks; and \$30,450 for asphalt, vitrified brick or block, bitulithic or bituminous macadam, and \$25,575 for macadam with brick between tracks.

White Plains, N. Y.—The Board of Trustees has received a petition for sidewalks on Waller avenue; also for the sidewalk, guttering and macadamizing of Winchester street.

Winston-Salem, N. C.—Forsyth County Commissioners will expend about \$9,000 in road improvements.

Akron, O.—The Board of County Commissioners is considering a resolution to issue \$50,000 bonds and to increase the tax levy two mills; 50 miles of improved roads will be built.—L. H. Oviatt, Commissioner.

Akron, O.—Petition is being circulated for the paving of Bowery street.

Cincinnati, O.—City Engineer J. H. Sundmaker has estimated the cost of paving a portion of Spring Grove avenue with granite, at \$462,330; also McLean avenue, \$39,728.

Cincinnati, O.—Council will be asked to adopt resolution for the issuing of at least \$5,000,000 bonds; of this amount \$1,000,000 will be used for grade crossing abolition and \$1,500,000 for streets and sewers.

Cincinnati, O.—City Engineer Sundmaker has submitted the estimate of the cost of paving Pike street, from Fifth to Pioneer, with wood blocks, at \$4,459.25, and bitulithic, \$3,961.25.

Hamilton, O.—Council has passed a resolution instructing City Civil Engineer L. A. Dillon to prepare plans and estimates for grading Schuler avenue.

Hamilton, O.—City Civil Engineer L. A. Dillon has submitted plans and specifications and the following estimates for paving South Front street; sheet asphalt with limestone curb, \$29,048; curbing and guttering, \$2,771.08.

Ironton, O.—The Kenova Council has resolved to employ engineers to make a survey and determine the cost of paving from the Big Sandy bridge to the Ceredo boundary line; as soon as this estimate is furnished an election will be held.

Lima, O.—Council has passed legislation for \$260,000 worth of street paving; County Commissioners will expend \$10,000 on roads.

New Philadelphia, O.—Citizens are urging the County Commissioners to submit the question of issuing \$500,000 bonds for road improvements.—John W. Hill, Clerk of Court.

Piqua, O.—City Engineer Whitlock has estimated cost of paving High street, including sewerage and installation of drainage systems, at \$29,433, and the macadamiz-

ing of Caldwell street at \$4,768; Council has ordered these streets surveyed.

Sandusky, O.—Bids will probably be called for about May 17 for paving Jackson street, about 7,000 square yards, at a cost of \$18,000; and Decatur and Adams streets, about 21,000 square yards; cost \$55,000.—B. J. McGory, Clerk, Board Public Service; C. M. King, City Clerk.

Sidney, O.—City will construct about 20,000 square yards of brick street paving.—W. R. Blake, City Engineer.

Toledo, O.—Council has passed an ordinance authorizing \$55,000 boulevard bonds for the Park Board.

Youngstown, O.—Council is considering the sidewalking of Dewey and West avenues, Robinwood and Dearborn streets; the paving of Falls avenue and the repaving of East Federal and South Champion streets.

Youngstown, O.—Council is considering resolutions for sidewalks on Ardale, Hilker and Reserve streets and Logan avenue; grading of Garlick street and the paving of Fairgreen and Crosman avenues.

Allentown, Pa.—Lehigh County Commissioners will issue a \$200,000 bond issue, part of which will be used to build new turnpikes.

Butler, Pa.—Council is considering the paving of a stretch of road between the end of the paving within the city limits and the paving on the township road.

Chambersburg, Pa.—City will pave Memorial square with brick.

Ellwood City, Pa.—City will expend about \$25,000 this summer for paving numerous streets with brick, on sand and gravel foundation.—W. E. McElroy, City Clerk.

Ellwood City, Pa.—Council is considering the establishment of subways under the B. & O. tracks at Fifth and Sixth streets.

Hazleton, Pa.—Council is considering a \$17,000 appropriation for paving North Laurel street.

Kingston, Pa.—Town Council has ordered the paving, curbing and grading of Pierce, Pringle and Hoyt streets and South College avenue.—A. J. Williams, Secretary.

Philadelphia, Pa.—Council's Committee on Highways has recommended ordinance authorizing the Department of Public Works to enter into contracts for widening Delaware avenue; estimated cost, including damages, \$1,500,000; work will be done under direction of G. S. Webster, Chief of Bureau of Surveys.

Reading, Pa.—The Finance Committee will include in its appropriation funds to pave, with beveled vitrified shale block, Sixth and Greenwich streets; also Second street with vitrified brick.

Providence, R. I.—Merchants and citizens in the vicinity of Cranston and Westminster streets are urging the construction of a street from Ninth street to the water front.

Spartanburg, S. C.—Council is considering the paving of Pine street.

Blountville, Tenn.—Senate has passed bill authorizing Sullivan County to issue \$300,000 additional bonds for road improvements.

Bristol, Tenn.—Citizens will vote on the proposed \$400,000 bond issue for good roads.

Dandridge, Tenn.—The State Legislature has passed a bill authorizing the County Court to issue \$150,000 additional pike bonds.

Fayetteville, Tenn.—Legislature has been petitioned by the city for authority to issue \$30,000 bonds for street and water works improvements.

Knoxville, Tenn.—J. W. Flenniken, Chairman of the Board of Public Works, has notified 300 property owners to lay sidewalks in front of their property.

Memphis, Tenn.—The Eighteenth Ward Improvement Club is urging Council to pave Polk and Georgia avenues, Walnut and East streets.—J. M. Buckingham, Secretary.

Galveston, Tex.—Bids will soon be received for raising grade of area between Thirty-third and Forty-fifth streets and avenue H and Broadway; bond issue of \$125,000 has been authorized.—A. T. Dickey, City Engineer.

Greenville, Tex.—The Greenville Commercial Club will expend about \$10,000 for constructing roads into Greenville.

Hillsboro, Tex.—Citizens will vote April 6 on \$4,000 bonds for street improvements.

Honey Groves, Tex.—Citizens have voted \$7,000 bonds for street improvements.—S. H. Gardner, Mayor.

Hubbard, Tex.—The Attorney General has approved a \$15,000 bond issue for street and sewer work.

San Antonio, Tex.—Citizens are considering the advisability of extending Martin street to connect with Lake View avenue.

Sherman, Tex.—The Sherman Booster Club is urging the laying of cement sidewalks.

Temple, Tex.—Citizens have voted \$50,000 paving bonds.

Texarkana, Tex.—Commissioners' Precinct No. 1 will expend \$250,000 authorized

for road improvements; plans call for the construction of four trunk roads, each about 12 miles long, graded and graveled; city streets will connect with these roads to be improved.

Ephraim, Utah.—Citizens are urging the construction of more cement walks.

Danville, Va.—Citizens will vote on \$7,000 bonds for paving West Main street.

Norfolk, Va.—The Board of Aldermen has adopted resolutions appropriating \$3,996 for paving Cove street with wood block and directing the Board of Control to ask for bids on paving Colonial street with some smooth material.

Petersburg, Va.—The Board of Aldermen has adopted a resolution for the appointment of a committee to confer with the Finance Committee on the issuing of \$70,000 street improvement bonds.

Seattle, Wash.—City Engineer R. H. Thomson has estimated the cost of grading and curbing Maple Leaf place at \$11,000 and asphalt paving on Western avenue at \$153,000.

Seattle, Wash.—Council has ordered the grading of Maple Leaf place, filling of First avenue South and paving of Western avenue; Council is also considering resolution appropriating \$2,100 for the improvement of Market street.

Seattle, Wash.—The Board of Park Commissioners has adopted a resolution directing the Superintendent to macadamize Fiftieth avenue a distance of 14 blocks; the Commissioners have also granted an \$18,000 appropriation for planing the same street from Blurett avenue to Eighty-fifth street.

Stellacoom, Wash.—Mayor Eugene Church has approved plans and specifications for the building of a boulevard two miles in length through the city of Stellacoom; bids will soon be advertised for.

Tacoma, Wash.—The Central Pierce County Good Roads Association has been organized to promote the construction of good roads in central Pierce County.—H. Ball, of MacMillan, President; C. J. Boldersley, MacMillan, Secretary.

Tacoma, Wash.—Council has adopted ordinances providing for the paving of North Eleventh and North Twenty-seventh streets, ordering improvement of North Forty-ninth and Queen streets, X street and South Fifty-fourth and Fifty-fifth streets.

Walla Walla, Wash.—Council is considering the grading and improving of Otis street.

Sheboygan, Wis.—Committee on Public Ways has recommended petition for the replacing of the cedar block pavement on Michigan avenue.

Hamilton, Ont.—The Board of Public Works has decided to purchase a stone crusher; cost, about \$2,000.

Lethbridge, Alta., Can.—City will expend \$64,000 in streets, sidewalks, sewers and water mains.

BIDS RECEIVED AND CONTRACTS AWARDED

Bisbee, Ariz.—Mr. Norcross, of the Western States Portland Cement Company, informed Council that his company did not care to enter into a contract with the city to furnish the cement for the street improvement work; he stated that his company had made a price to its agents here which was the same as that made by the other companies and that through a mistake, Mr. Hurst had of his own accord agreed to split his commission with the city. Norcross stated that this could not be done and withdrew his bid. The contract was then let to the Moore Fuel & Feed Company, as 2 cents a barrel could be saved the city in freight on returned sacks. The Moore Company was requested to furnish a bond of \$5,000 for the faithful fulfilling of the contract.

Pasadena, Cal.—Contract for grading, oiling, curbing, guttering and sidewalking of Mentor avenue from Villa to East Orange Grove has been awarded J. E. Haddock, at \$3,648.78. Other bidders were A. W. McDowell, \$3,707.43; J. C. Kensman, \$3,906.80; A. B. Palmer, \$3,977.22.

Redlands, Cal.—Ernest Frenzell has been awarded contract for macadamizing Reservoir street with crushed rock base coated with liquid asphalt at 7.4 cents per square foot.—L. W. Clark, City Clerk.

Sacramento, Cal.—F. E. Frey, of San Francisco, has secured the contract for macadamizing Auburn road, between Sacramento and Placer counties, at the following bid: 43,776 cubic yards earth excavation and excess fill, 37 cents; 1,800 cubic yards earth overhaul, 5 cents; 26,161 tons macadam, \$1.90; 5,700 barrels asphaltic oil, heating and placing, 35 cents; 870 linear feet 12-inch pipe culverts, 80 cents; 177 linear feet 14-inch pipe culverts, 90 cents; 411 linear feet 18-inch pipe culverts, \$1.10; 45 linear feet 24-inch pipe culverts, \$1.25; 34 linear feet 2x2-foot box culverts, \$2.20; 62 linear feet 1½x3-foot box culverts, \$3;

70 linear feet 2x4-foot box culverts, \$4; 32 1/4 linear feet double 2x2-foot-6-inch box culvert, \$5.50; 35 1/2 linear feet double 2-foot-6-inchx3-foot box culvert, \$6; 21 1/2 linear feet 7x9-foot box culvert, \$15; 5,308 B. M. feet redwood lumber in trestles, \$45; 14,906 M. feet Oregon pine lumber in trestles, \$35, and 110 cubic yards plain concrete lumber in trestles, \$8.50; total, \$72,301. Totals of other bids: Clark & Henry Construction Company, Sacramento, \$73,135; James Touhey, Sacramento, \$77,949; Cotton Bros., Oakland, \$80,904; Lewis Moreing, Stockton, \$90,275; O'Brien & Mahoney, Sacramento, \$84,165; Ransome-Crummey Company, Oakland, \$106,113; McGilvary Construction Company, \$84,852.

F. E. Frey also secured contract at the same time for 5,700 barrels of oil for the road, at \$1.215 per barrel; total cost, \$6,925.—C. M. Phinney, County Surveyor.

Denver, Col.—The contract for paving 12 alleys in Alley Paving District No. 10 has been awarded to the Clinton Construction Company, 220 15th street, for \$12,229.

Waterbury, Conn.—George Abbott, of Oakville, has been awarded the contract for the construction of the new road near the Wigwam reservoir as the lowest of eight or ten bidders, his figures being \$3,100.

Palmetto, Fla.—Contract for paving with local rock has been awarded to J. M. Towne, of Tampa, for \$9,760.—E. F. Wilson, Mayor.

Savannah, Ga.—City opened bids and awarded contracts for granite blocks for paving; construction by day labor; \$10,300 to be expended.—Harry Willink, Director of Public Works.

Peoria, Ill.—J. S. Allen & Co., 1723 Main street, have secured the contract for resurfacing with brick Knoxville avenue at \$9,044.

Danville, Ind.—The Board of Commissioners of Hendricks County has awarded a contract for the construction of the Jones rock roads, aggregating 45,971 feet, to Leroy R. Hiatt, of Plainfield, at \$25,000.

Indiana Harbor, Ind.—W. W. Hatch & Sons, Goshen, have secured contract, at \$22,000, for constructing 218,000 feet of sidewalks.

Indianapolis, Ind.—The California Asphaltum Sales Agency secured the contract for supplying the city repair plant with material for the year of 1909 at \$23.80 per ton for California asphalt.

The following low bids have been received by the Board of Public Works: Holton place, cement walks, from Northwestern avenue to Big Four tracks, John Jenkins, 49 1/2 cents; Senate avenue, from Thirtieth to point 648 feet north to Thirty-third, curbing, Charles Engler, 65 cents; Sanborn street, from New York to Owosso street, Manley & O'Donnell Coal Company, \$1.63; Alley west of Alabama street, from South street south to first alley, Manley & O'Donnell Coal Company, \$1.97; first alley north of Prospect street, from State avenue to Dawson street, gravel roadway, J. V. Baxter, 38 cents; DeQuincy street, cement walks and graded roadway, from Washington street to New York street, Henry Pothast, 96 cents.—Blaine H. Miller, City Engineer.

Jeffersonville, Ind.—The Board of Public Works, March 5, awarded a contract for the improvement of Court avenue from the east line of Wall street to the west line of Walnut street, a distance of two squares, to George W. Palmer Company, of Logansport, at \$12,119.70; the company recently completed the Seventh street improvement, and the Board awarded the contract against two local bidders. William O. Sweeney proposed to do the same work for \$12,487.33 and Thomas O'Neill's bid was \$12,625.98; work is to start as soon as possible; Court avenue is to have vitrified wagon road, granitoid pavements, curbing and gutters.

Morocco, Ind.—The contract for building eight miles of stone road in Lake Township in northern Newton County has been awarded to Henry Stoner of Lake Village for \$14,377. Work on the improvement will begin this spring.

Davenport, Ia.—Bids for the grading of Fifteenth street from Warren to Marquette, South from Division to Davie and a block on Davie, McKinley avenue from the railroad tracks to Bismark street, and Davie street from Taney to the north end of Fejervary Park, were opened March 10. The Davenport Construction Company was the lowest bidder for the South street work and Davie street work. Louis Littig was the lowest bidder on the Fifteenth street job, and W. P. Carlin got McKinley avenue. The bids were as follows:

Fifteenth street: Davenport Construction Company, 31 cents per cubic yard; Independent Construction Company, 33 cents per cubic yard; Louis Littig, 29 1/2 cents per cubic yard; W. P. Carlin, 30 cents per cubic yard; People's Construction Company, 33 cents per cubic yard.

Davie street: Independent Construction

Company, 63 cents per cubic yard; Davenport Construction Company, 37 cents per cubic yard; Louis Littig, 60 cents per cubic yard; W. P. Carlin, 50 cents per cubic yard; People's Construction Company, 68 cents per cubic yard; McCarthy Improvement Company, 46 cents per cubic yard.

South street: Independent Construction Company, 35 cents per cubic yard; Davenport Construction Company, 29 cents per cubic yard; Louis Littig, 32 1/2 cents per cubic yard; People's Construction Company, 32 1/2 cents per cubic yard; McCarthy Improvement Company, 31 cents per cubic yard.

McKinley avenue: Davenport Construction Company, 35 cents per cubic yard; W. P. Carlin, 34 cents per cubic yard.

Topeka, Kan.—Contracts for brick paving have been awarded to R. G. Gilfillan for first and second grade paving; John Ritchie for resurfacing; Folk & Luttjohn for curb and gutter, and R. G. Gilfillan for rolling and grading; the work aggregates about \$70,000, covering 35 blocks of paving and 70 blocks of extended curbing.

The complete list of bids are as follows: First Grade Paving—R. G. Gilfillan, \$1.39; John Ritchie, \$1.55; M. W. Gilmore, \$1.49; Haskins & Ramsey, \$1.55; McGuire, \$1.41; Nolan & Drapier, \$1.55; J. H. Stanton, \$1.37; National Construction Company, \$1.79. Second Grade Paving—Gilfillan, \$1.26; Ritchie, \$1.27 1/2; Gilmore, \$1.37; Haskins & Ramsey, \$1.35; McGuire, \$1.31; Nolan & Drapier, \$1.35; Stanton, \$1.31; National Construction Company, \$1.64. Third Grade Paving—Gilfillan, \$1.26; Ritchie, \$1.20; Gilmore, \$1.28; Haskins & Ramsey, \$1.21; McGuire, \$1.26; Nolan & Drapier, \$1.31; Stanton, \$1.26; National Construction Company, \$1.58. Grading—Gilfillan, 32 cents; Ritchie, 35 cents; Haskins & Ramsey, 33 cents; McGuire, 32 cents; Nolan & Drapier, 29 cents; Stanton, 29 cents; National Construction Company, 28 cents. Rolling—Ritchie, 2 cents; Gilfillan, 1 1/2 cents; Haskins & Ramsey, 2 1/2 cents; McGuire, 1 cent; Nolan & Drapier, 2 2-3 cents; Stanton, 2 cents; National Construction Company, 3 cents. Resurfacing—Gilfillan, \$1.20; Ritchie, \$1.14; Gilmore, \$1.17; Haskins & Ramsey, \$1.20; Nolan & Drapier, \$2; Stanton, \$1.18; National Construction Company, \$1.30. Curb and Gutter—Gilfillan, 54 cents; Gilmore, 51 and 53 cents; Haskins & Ramsey, 51 and 56 cents; McGuire, 51 and 53 cents; Nolan & Drapier, 60 cents; Stanton, 49 cents; National Construction Company, 55 and 60 cents; Folk & Luttjohn, 49 and 54 cents; J. A. McLaughlin & Sons, 51 and 54 cents.

Louisville, Ky.—The Board of Public Works March 9 awarded contracts to the lowest bidders for 32 pieces of sidewalk construction in various parts of the city; the prices for brick ranged from 57 to 65 cents a square yard and for granitoid the prices ranged from 95 cents to \$1.05 a square yard. These prices are about the same as those that have prevailed for two years past on such work. The total amount of the awards will reach close to \$20,000. The following are the contractors and the awards to each: Staebler & McFarland, both sides Campbell street, between Walnut and Gray; south side Grayson street, between Eighth and West; west side of Twenty-sixth street, between Duncan and Alford; north side of Duncan street, between Eighteenth and Nineteenth; south side of Cawthon, between Seventh and Eighth; south side of Walnut street, between Twentieth and Twenty-second; both sides of Marshall street, between Campbell and Wenzel; south side of Story avenue, between Frankfort and Letterle; north side of Story avenue, between Cabel and Webster; east side of Fifteenth street, between Broadway and first alley north. L. R. Figs, east side of Fifteenth street, from Rowan to first alley north and south; north side of Duncan street, between Twentieth and Twenty-first; both sides of Madison street, between Eleventh and Thirtieth; both sides of Oak street, between Twelfth and Thirtieth, and between Thirtieth and Eighteenth.

New Orleans, La.—Committee has recommended an ordinance accepting the bid of the Etta Contracting Company for the repaving with small granite blocks and existing square blocks Calliope street, from Annunciation to South Peters streets. Lies over. Also for the paving with small granite blocks Ursuline street, from North Peters to Decatur street; of the Southern Bitulithic Company, for the paving with bitulithic Joseph street, from Prytanla to Camp street, as also with bitulithic for the paving of Walnut street, from Esther to Magazine street; also, with the same material, Robert street, from Dryades to South Rampart street; also, with the same material, for the paving of Esplanade avenue, lower side, from Claiborne to Galvez street; the Rudolph S. Blome Company for paving with granitoid Lopez street, from Tulane avenue to St. Louis street; also for the pav-

ing with granitoid Lopez street, from Tulane avenue to Poydras street. Lies over.

Fort Williams, Me.—Bids for the construction of concrete walks were received by Capt. F. J. Morrow, Constructing Q. M., at Portland, February 25, as follows: (a) Construction, concrete, per square yard; (b) loaming and seeding, per square yard; (c) total: Northeastern Paving & Construction Co., Portland, Me., (a) \$2.18; Peter F. Connolly, Boston, Mass., (a) \$2.24; Frank & Ralph Williams, Boston, Mass., (a) \$2.10, (b) 35 cents; Maine Artificial Stone Co., Portland, Me., (c) \$1.750.

Boston, Mass.—Superintendent of Streets Guy E. Emerson has awarded a contract for operating the stone crusher owned by the city on Chestnut Hill avenue, Brighton, to the Rowe Contracting Company. Under the terms the contractor will supply stone to the city for 95 cents per ton for delivery in the Brighton district. In addition, he has the privilege of supplying crushed stone from the ledge to any who care to purchase, with the proviso that the city receive 15 cents for each ton quarried. Under the contract the city will be able to buy crushed stone for 80 cents per ton, where it has always paid \$1.25 or more for it in the past.

Detroit, Mich.—The following are the lowest bids opened for paving with cedar block, price given per square yard: Fremont avenue, Julius Porath, 40 Fort street, West, \$1.90; Hubbard avenue, J. A. Mercier, Hammond Bldg., \$1.87; Wight street, T. E. Currie, \$1.95; Franklin street, M. E. Ryan & Son, \$1.96; Mt. Elliott avenue, and with brick Michigan avenue, F. Porath & Son, \$1.79 and \$2.47 respectively.

Duluth, Minn.—The U. S. Cast Iron Pipe & Foundry Company has been awarded contract for 1,500 tons 3 to 20-inch cast-iron pipe, \$26.10; R. D. Wood & Co., Philadelphia, Pa., 75 improved Mathews hydrants, 6-inch connection, 2 hose and 1 steamer connection in 8-foot trench, \$39.75; Roe Stephens Mfg. Company, for 4-inch gate valves, at \$7; 6-inch, \$10.50; 10-inch, \$22.50.—L. N. Case, Manager.

Kansas City, Mo.—Contracts were awarded by the Board of Public Works March 5 as follows for paving: To McTernan & Halpin Construction Company, for macadam pavement on Holmes, Charlotte, Twenty-third and Thirty-ninth streets and Tracy avenue, 90 cents to \$1.19 per square yard; to the Halpin-Dwyer Construction Company, for macadamizing Lydia avenue, Twenty-ninth to Thirtieth street, at 95 cents per square yard; to J. E. Welsh, for paving Tenth street with sandstone block, \$2.89; to Parker-Washington Company, for paving Wyoming street with sandstone block, \$3.59 per square yard, and Pitt avenue, with asphalt, at \$1.97, and to the Cleveland Trinidad Paving Company, for paving Jackson avenue with asphalt, at \$1.82.

Newark, N. J.—The Road Committee of the Freeholders opened bids for the improvement of Mt. Pleasant avenue, West Orange. Bids were as follows for excavations of earth, per square yard: Richard H. Kernan, 35 cents; Pasquale Cestone, 42 cents; Robert Doriety, 44 cents; Harrison Construction Company, 45 cents; Donato Fusco, 75 cents; Sandford & Company, 50 cents, and Wright & Lindsley, \$1. For rock, per square yard: Fusco & Cestone, 97 cents; Doriety, \$1.30; Wright & Lindsley, \$1.60; Kernan, \$1.75; Sandford & Company, \$1.49, and Harrison Construction Company, \$2.25. For laying pavement: Fusco, 59 cents per square yard; Doriety, 65 cents; Harrison Construction Company, 75 cents; Sandford & Company, 80 cents, and Kernan & Cestone, 95 cents.—James Owen, County Engineer.

North Plainfield, N. J.—The contract for furnishing crushed stone for the streets was awarded to J. Y. Wilson & Company; the price submitted by them, which was the lowest, was: Half-inch screenings, 74 cents; one-inch, 74 cents; 2 1/2-inch, 70 cents.

Buffalo, N. Y.—Bids for repaving Richmond avenue were opened by the Board of Park Commissioners and five bids were received as follows: Barber Asphalt Paving Company, asphalt, \$109.177 and \$107.339, new and old curb. Frank Bardol, macadam, \$69,000; without guarantee, \$63,000. German Rock Asphalt Company, asphalt, \$83,070, and \$67,570 if old curb is used. Warren Bros. Company, bitulithic, with old curb, \$77,918; paving, \$92,806; with new curb, resurfacing, \$82,635; paving, \$97,523. Henry P. Burgard, asphalt, \$99,250, old curb; \$103,000, new curb. Mr. Burgard's bid was accompanied by a bond instead of the required certified check. The bids will be tabulated for the regular meeting of the Board. The German Rock Company is the lowest bidder.

New York, N. Y.—Bids were received March 10 by John F. Ahearn, President Manhattan Borough, for paving as follows: Repairing asphalt block pavement, including 15,000 square yards new asphalt

block, 1,000 square yards old asphalt block and 900 cubic yards Portland cement, Harlem Contracting Company, 2 Rector street, \$35,698, and Barber Asphalt Paving Company, 30 Church street, \$36,480.

Regulating, grading and paving with asphalt block on concrete foundation, Tenth avenue, from Academy street to Broadway, low bidder, Harlem Contracting Company, 2 Rector street, as follows: 29,550 square yards asphalt block pavement, \$1.50; 5,300 cubic yards Portland cement concrete, including mortar bed, \$5.40; \$1,600 linear feet new bluestone curb, furnish and set, 70 cents, and 6,000 linear feet old bluestone curbstone, redressed, rejointed and reset, 30 cents; total, \$75,865. Totals of other bids: Barber Asphalt Company, 30 Church street, \$79,925, and Sicilian Asphalt Pavement Company, 41 Park Row, \$126,181.

Widening and repaving with sheet asphalt on concrete foundation, Fifth avenue, from Twenty-fifth street to Forty-fifth street, except Fortieth and Forty-second streets, to include 7,750 square yards asphalt pavement, 1,950 cubic yards Portland cement concrete, 500 linear feet new curb, 8,940 linear feet old curb, reset, etc., Barber Asphalt Company, 30 Church street, \$52,997; Uvalde Asphalt Company, 1 Broadway, \$49,692.50, and Sicilian Asphalt Pavement Company, 41 Park Row, \$40,426.

Rochester, N. Y.—The Board of Contract and Supply, March 9, awarded contract for a pavement in North Goodman street to Frank V. Brotsch & Son for \$39,258.

Charlotte, N. C.—A contract has been awarded the Atlantic Bitulithic Company of Norfolk, Va., for paving East avenue, Charlotte, N. C., at a cost of \$47,000; within the past year this company has been granted three large contracts, aggregating more than \$200,000.

Graham, N. C.—T. D. Scruggs, of Durham, has secured the contract for grading roads in Alamance County.

Akron, O.—Dan O'Marr has been awarded contract by the city, at \$3,054, for paving Orleans and Mayfield avenues.

Delaware, O.—Riddle & Figley, city, have been awarded a contract for laying 1,540 square yards macadam pavement, 8 inches thick, for 35 cents a square yard, and 1,992 cubic yards excavation at 40 cents; also 1,702 linear feet 4-inch sand stone curbing, machine dressed, for 44 cents.

Chas. W. Riddle has been awarded a contract for laying 50,000 square feet cement sidewalk, 4 inches thick, on 8-inch crushed stone foundation, for 12½ cents per square foot.—Geo. S. Irwin, City Engineer.

Hamilton, O.—The bids of J. H. Trunk, the Garver Construction and Transfer Company, both of Hamilton, and the bids of the Northwestern Construction Company, of Franklin, Pa., on many street improvements, were declared illegal by Solicitor Connaughton in an opinion to the Board of Public Service, as the bidders forgot to attach to the contracts the names of all parties interested. Frank Kinch, of the Miami Cement Company, is the next lowest bidder and the Board rejected all bids except Frank Kinch's bid for the Rhea avenue work, amounting to \$1,159.50. The Garver company bid lowest of almost \$30,000 worth of work.

Guthrie, Okla.—Bids for the construction of sidewalks were received from O. E. McHartner, E. W. Miller and Ferrall & Wall, the bids ranging from 42 to 48 cents per lineal foot. The same contractors bid on the street crossings at 6½ and 7½ cents per square foot; all bids were referred to the public Improvement Committee.

Portland, Ore.—For the seventh time bids for the improvement of East Third street between Oak street and Hawthorne avenue have been rejected by the Street Committee of the City Executive Board, and the Board was recommended to order the City Auditor to readvertise for proposals. The Pacific Bridge Company was the only bidder, and the bid totaled 5 per cent. more than the estimates of the City Engineer. Many of the property owners on the street urged the Committee to award the contract, but Mayor Lane refused to permit this to be done, as he said he had been told by another contractor that if the city would readvertise he would submit a lower bid.

Reading, Pa.—William H. Dry, Crystal Palace Building, has been awarded contract for filling and grading Centre avenue, from Pike to Amity street.

Wilkes-Barre, Pa.—The Austin Western Company has been awarded contract for furnishing the county with an eight-ton motor road roller; also two sprinklers. The roller will cost \$2,450, and the sprinklers \$290 each.

York, Pa.—The County Commissioners signed the contract awarded by the State Highway Department to E. M. Good, of Lancaster, the highway in Dillsburg Borough for \$10,531.18.

Memphis, Tenn.—City has awarded contract to Mineral Rubber Paving Company, L. T. Kavanaugh, President, for asphalt paving around Forest Park and on Manassas street; cost, about \$10,000.

Dallas, Tex.—The bid of the Texas Bitulithic Company for the paving of North Ervay was the only bid submitted; it was as follows: Extra excavation, with free haul of 6,000 feet and a charge of 1 cent for each extra 100 feet, 60 cents a cubic yard; extra gravel concrete, \$6.50 a cubic yard; extra rock concrete, \$7.50 per cubic yard; bitulithic with 5-inch gravel concrete foundation, \$2.30 a square yard for five years' guarantee, for additional five years, \$2.45; without maintenance, \$2.30; bitulithic paving on 6-inch bituminous foundation, \$2.30; additional five years' guarantee, \$2.45; without maintenance guarantee, \$2.20; for every additional square yard of 6-inch gravel base, 12 cents; for curved concrete curbing, 55 cents a linear foot; for straight concrete curb, 38 cents a running foot; for concrete gutter, 37 cents; 3x8-inch oak headers, 20 cents; removal of bois d'arc blocks, 10 cents a square yard.

Seattle, Wash.—The contract for concrete walks on West Seventy-third street and other streets has been awarded to George Hansen, at \$6,418.—R. H. Thomson, City Engineer.

Tacoma, Wash.—Three contracts for street grading were awarded by Commissioner of Public Works H. J. McGregor, March 1. The Coast Contracting Company was given two of the contracts, one for grading North Tenth and Eleventh streets through Bolcom's addition, at \$2,868, and the other for grading East E and F streets from Wright to Morton streets, at \$8,443. This contract also calls for building sidewalks. B. W. Kibler was given the contract for building sidewalks on South Eleventh street from the Eleventh street bridge to St. Paul avenue. The price is \$1,183.

Tacoma, Wash.—Commissioner of Public Works H. J. McGregor has awarded the contract for grading North Twenty-fourth street from Union avenue to Stevens street and Stevens street from North Twenty-fourth to North Thirtieth streets, to the Coast Contracting Company, which submitted a bid of \$15,480; this was the only bid received.

Wheeling, W. Va.—The contract for hauling 50 tons of stone for improving the road leading up to the crematory has been awarded by the Council Committee on Health to Robert Williams at his bid of 70 cents per ton.

Superior, Wis.—The Board of Public Works has awarded contract for grading and bridging a portion of West Second street to Edward Johnson, at \$7,340.

SEWERAGE

Alturas, Cal.—The Board of Trustees is now devising plans for putting in a sewer and drainage system for the town; Louis Shaw, Civil Engineer, has been employed by the Board for the purpose of surveying the town and draughting maps and plats showing the required work and estimated expense of installing such systems here.

Pasadena, Cal.—Property owners on Marengo avenue have decided to install a storm sewer and proceed to make the avenue into a fine boulevard; cost, \$35,000.

Pasadena, Cal.—Council has granted a petition for the construction of sewer mains on Los Robles, Oakland avenue and Madison avenue and an outfall sewer from South City limits to city outfall sewer.

Portersville, Cal.—Citizens are considering the construction of a sewer system.

San Francisco, Cal.—The Board of Public Works has passed a resolution requesting the Supervisors to set aside \$110,000 for construction of sewers adjacent to Parkside and \$60,000 for sewers in Ocean View.

Willows, Cal.—Engineer Beebe has been authorized by the Town Trustees to draw up working plans so that bids for the construction of the sewer system may be called for as soon as possible; it is the intention of the Trustees to let the work out to town people if possible, but the contract will have to be let to the lowest and best bidder.

Willows, Cal.—The Town Trustees have sold a \$30,000 sewer bond issue to the Bank of Willows.

Jacksonville, Fla.—Citizens are urging the bonding of the city for \$50,000 for sewerage and water systems.

Tampa, Fla.—The Board of Public Works has submitted report on estimated cost of sewers in new territory as \$40,000, and sewers in old city limits, \$10,000.

Valdosta, Ga.—Citizens will vote April 14 on \$60,000 improvement bonds; \$5,000 will be spent in extending sanitary sewers.

Joliet, Ill.—City Engineer H. A. Stevens has been instructed to prepare plans and estimates for sewer main on South Ottawa street.

Sterling, Ill.—The Board of Local Improvements has notified the City Engineer to make a new survey for the proposed North End sewer system; cost, approximately, \$31,000.

Hammond, Ind.—The Board of Public Works has passed a resolution for the Erie street local sewer.

Michigan City, Ind.—City Engineer H. M. Miles has prepared plans for a sewer in Tryon and Hobart streets.

Oxford, Ind.—City has ordered plans and specifications, upon which bids will be asked, for the construction of an extensive sewer system.

Terre Haute, Ind.—Council is considering construction of sewers in Popular, Spruce and Wabash avenue; ½ mile of 24-inch and 1 mile of 18-inch pipe will be needed; 1 mile of 48-inch brick sewers will be laid in Seventh street.—C. B. Schmidt, City Engineer.

Vincennes, Ind.—The Legislature has authorized city to issue bonds for a sewerage system.

Clinton, Ia.—City Engineer R. C. Hart is preparing plans for constructing sewers in numerous streets.

Dubuque, Ia.—The City Engineer is preparing plans for storm and sanitary sewers to be constructed in the north end.

Mason City, Ia.—Bids will be received shortly for constructing sanitary sewers in various streets.—J. H. McEwen, City Clerk.

Waterloo, Ia.—City will expend about \$75,000 for the west side sewer extension.

Hutchinson, Kan.—Council is considering a resolution authorizing \$6,600 bonds for a sewer in the southeast part of the city.

Lawrence, Kan.—Council has ordered sewers constructed in alleys between Pennsylvania and New Jersey, New York and Connecticut streets.—F. D. Brooks, City Clerk.

Leavenworth, Kan.—Robert Cartwright has appeared before the Board of Commissioners and requested the Mayor and Board of Commissioners to order Albert Maduska, City Engineer, to make a survey and fix the grades on Sixth avenue and to make the survey for a sewerage system in South Leavenworth.

Topeka, Kan.—An inspection trip has been made over the Ninth Sewer District by Henry Knipe, Commissioner of Streets, and Omar Abernathy of the Civic Board, accompanied by Robert McDonald, of the Burns & McDonnell Sanitary Engineering Co., of Kansas City, Mo., and J. H. Johns, City Inspector, with the object of arranging plans for the laying of a sewer in that district.

Lexington, Ky.—Council is considering the construction of sewers in Grosvenor avenue, Bryant avenue and East Maxwell street.

Baltimore, Md.—Citizens are urging the erection of a temporary sewage disposal plant in Walbrook for the relief of a large section of the annex; \$30,000 has been asked of the Board of Estimate; State Senator Perkins is representing the citizens.

Baltimore, Md.—Plans for the temporary sewage disposal plant on the edge of the Park, to be made in connection with the high service reservoir, near Forest Park, have been approved by the Board of Estimates; Sewerage Commission has agreed to build the trunk line sewers to connect with it; City Solicitor Poe has been asked to find a way, if possible, for providing for the work this year.

Methuen, Mass.—Town has voted \$2,500 for a sewer on Riverdale street and \$550 for one on Lowell street.

Ann Arbor, Mich.—Bids will be received by the Board of Public Works March 17, 7:30 p. m., for constructing 15,700 feet of 8 and 10-inch sewers.—E. W. Groves, City Engineer.

Cassopolis, Mich.—George S. Pierson, City Engineer, Kalamazoo, Mich., has been selected to make preliminary surveys for a complete system of sewerage for the village and county buildings.

Detroit, Mich.—Bids will be received March 20 for \$175,000 sewer bonds.—Frank E. Doremus, City Comptroller.

Albert Lea, Minn.—Citizens will vote April 6 on \$26,000 sewer bonds.—Wm. Banreck, City Engineer.

Mankato, Minn.—City Engineer John Wilson is preparing plans for sanitary sewers in various streets.

Minneapolis, Minn.—City will expend \$130,000 in sewer construction this year.

Raymond, Miss.—Walter G. Kirkpatrick, of Jackson, has been selected to prepare plans for the purification of the sewage for the County Court House.

Carthage, Mo.—Council has passed an ordinance providing for the establishment of Sewer District No. 8, which will drain two blocks.

Alliance, Neb.—Citizens have voted \$45,000 sewerage bonds.—Andrew Rosewater, Omaha, Engineer.

Hastings, Neb.—The Sewer Committee has been instructed to provide new basins

for the disposition of sewage at the sewer farm.

Omaha, Neb.—Council will issue \$100,000 bonds to carry on sewer work during the present year.

Bordentown, N. J.—The Board of Sewer Commissioners is receiving bids for the installation of a sewerage system; \$50,000 bonds will be issued.

Haddonfield, N. J.—The Board of Health is preparing an ordinance which will compel all property owners whose homes are on streets where sewers are laid to cause all house draining to drain into the sewer.

Hoboken, N. J.—The Board of Trade is in favor of having plans and specifications drawn for an entirely new sewerage system for Hoboken; resolution has been passed calling on the Common Council to have some practical plan drawn up so that it might be submitted to contractors and an estimate of its probable cost made.

Millville, N. J.—Council has selected Civil Engineer William F. Boardman as Supervising Engineer for the construction of the new \$25,000 sewage disposal plant; work will begin very soon and the plant pushed to completion within three months.

Newark, N. J.—The Board of Street and Water Commissioners is considering the construction of sewers in Shipman and Fourth streets.

Water Commissioners has ordered sewers constructed in Hamburg Place, Avenue L, Magazine, Margarette, Niagara, Berlin and St. Charles streets.—M. R. Sherrerd, Chief Engineer.

Perth Amboy, N. J.—The State Sewerage Commissioner has approved the plans for a trunk sewer system to empty into the Raritan River at foot of Sheridan street; system will consist of sewers ranging from 6-inch pipe to a tunnel of brick and concrete of 7 feet; cost, \$80,000.

Portales, N. M.—Plans have been completed by Engineers Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for brick and vitrified pipe sewers; cost, \$25,000.—H. B. Ryther, City Clerk.

Silver City, N. M.—City is considering installation of a sewerage system.

New York, N. Y.—The New York Chamber of Commerce is determined to force the construction of a filtration plant before the sewage of the Bronx Valley will be permitted to enter the channel of the Hudson River.

Syracuse, N. Y.—City will construct a sewer in the southern section of the 17th Ward of brick or concrete; cost, \$60,000.—Henry C. Allen, City Engineer.

White Plains, N. Y.—The Board of Trustees is considering the making of new contracts and the appropriating of a greater sum of money for the treatment of sewage from the Court House, Bloomingdale and other institutions; Engineer Lavery has been directed to prepare plans for a trunk sewer through the Anderson property.

White Plains, N. Y.—Bids will be received April 5, 8 p. m., for \$12,000 sewer bonds.—Frederic S. Barnum, President Board of Trustees.

Kinston, N. C.—City is considering a \$75,000 bond issue for the extension of the sewer system and other improvements.

Ashtabula, O.—Council has ordered the Board of Public Service to prepare plans for a sewer in Jefferson street.

Cincinnati, O.—Council will be asked to adopt resolutions for issuing \$1,500,000 sewer and street bonds.

Elmwood Place, O.—Bids will be received April 7 for \$50,000 sewer bonds.—J. J. McQueen, Village Clerk.

Lima, O.—City is considering sewer work which will cost approximately \$10,000.

Niles, O.—Council has passed under suspended rules an ordinance for the construction of a sewer in Maple, Linden and Neal streets; also an ordinance for the appropriation for the sewage disposal plant.

Youngstown, O.—Council is considering the construction of a sewer in Burnett, Eagle and Sycamore streets.

Youngstown, O.—Council is considering construction of sewers in Eagle and Sycamore streets.

Ryan, Okla.—The Ryan Commercial Club will soon receive bids for a sewerage system.—J. S. May, Secretary.

Waurika, Okla.—Citizens have voted \$8,000 for extension of sewer system.

Altoona, Pa.—Council has ordered a sewer constructed in Eighth alley.—City Engineer Engstrom.

Danville, Pa.—Council is considering the matters relating to sewage disposal.—L. X. Grier, E. S. Gearhart, Dr. P. C. Newbaker and G. F. Relfsnyder, Committee.

Harrisburg, Pa.—City has not yet selected engineers for sewer extensions and a disposal plant recommended by State Health Commissioner S. G. Dixon; \$6,000 has been set aside for making of plans.

Media, Pa.—Dr. E. M. Harvey, J. H. Sweeney and Maurice Michener have been appointed a committee to investigate the

advisability of installing a complete sewerage system.

Clinton, S. C.—The Clinton Business League has placed a fund at the disposal of the city for preliminary steps for the installation of a sewerage system.—A. E. Spencer, President.

Gaffney, S. C.—Citizens will vote March 19 on bond issue for construction of sewer system.

Mt. Pleasant, Tenn.—J. G. Jackson and F. De Marco, of Pleasant, have been selected as engineers for sewer system, water works and electric light plant.

Murfreesboro, Tenn.—The question of great cost necessary to convey the sewage from the city of Murfreesboro to Stone's River has operated to prevent a perfect sewerage system being installed, but the city authorities have been making explorations with the view of locating a large cave which is said to underlie the northwestern part of the city, in which the pipes may discharge the sewage; should the cave be of sufficient capacity it will cost something like \$50,000 less to sewer the city than it would to have the sewage emptied into the river.

Brownsville, Tex.—The Commercial Club is urging the installation of a sewerage system at a cost of \$30,000.

Dallas, Tex.—Commissioners Sullivan, Moran and Seay have been named by the Board of Commissioners to ascertain best method of disposing of sewage of city and to secure estimates on the cost of constructing a plant.

Hillsboro, Tex.—Citizens will vote April 6 on \$12,000 bonds for extension of sewer system and water works.

Houston, Tex.—F. L. Dormant has been selected as special engineer to prepare plans for various municipal improvements, including storm and sanitary sewer construction; \$225,000 bonds for each have been voted; bids will be received in about 60 days.—T. C. Tarver, City Engineer.

Hubbard, Tex.—The Attorney General has approved a \$15,000 bond issue for sewer and street work.

San Antonio, Tex.—A. C. Pancoast, Assistant City Engineer, has completed plans and specifications for sewer construction in Prospect Hill Improvement District; \$45,000 bonds have been voted; plans call for construction of 11.2 miles of sewers; piping ranging from 8 to 22 inches; 145 manholes and 20 combination manholes and flush tanks.

Uvalde, Tex.—City is considering construction of sewer system.

Rocky Mount, Va.—City will construct sewer system.

Kent, Wash.—Council is considering establishment of a sewerage system.

Seattle, Wash.—City Engineer R. H. Thomson has estimated the cost of constructing sewers in Aurora and Linden avenues at \$13,000.

Tacoma, Wash.—Council is considering an ordinance providing for the issuance of \$75,000 bonds for building sewers.

Tacoma, Wash.—Citizens will vote April 6 on \$75,000 bonds for building storm water sewers.

Beloit, Wis.—City Engineer R. R. Caldwell has submitted a plan and estimate for a sanitary sewer in Woodward, S. D.

Kaukauna, Wis.—The Sewer Commissioners have placed before the Council a recommendation for the city to build a sewer the coming summer from the corner of Desnoyers street to the corner of Lawe street; there is a sewer along this thoroughfare but it is not deep enough to drain cellars and basements.

West Allis, Wis.—The Cameron Septic Tank Company has completed plans and specifications for the sewage reduction plant; bids will be received soon.—Fred Schneider, City Engineer.

Culican, Mex.—Olmsted & Gillelen, Consulting Engineers, 607 Wright & Callender Bldg., Los Angeles, Cal., have been selected to prepare the necessary plans for a modern sewer and drainage system.

New Toronto, Ont., Can.—Bids will be received in May for the construction of a sewage disposal plant; cost, \$14,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Los Gatos, Cal.—The Trustees have awarded contracts for street work in the shape of sewers on Main street, San Jose avenue and Johnson avenue. There were five bidders for the sewer contract, as opposed to two at the last meeting, when it was decided to continue the time for the opening of the bids, whose bid on the whole work were as follows: E. C. Loofborrow & Company, \$2,456.70; J. Heary, \$2,373.14; J. J. Nichols, \$2,876.99; Michael Murphy, \$2,753.43, and O. Lewis & Son, \$2,409.50. Each proposal contained estimates on the three parts of the work separately and contracts were awarded on this basis. O. Lewis &

Son, of Los Gatos, being the lowest bidder on two of the jobs, were awarded the contract for the work on Main street for \$396.86 and the work on San Jose avenue for \$245.70. J. J. Nichols, formerly of Los Gatos, but now of Palo Alto, being the lowest bidder, was awarded the contract for the work on Johnson avenue for \$1,476.

Pueblo, Col.—James Cavin has been awarded contract by the city, at 61 cents per linear foot, for laying 1,443 feet of 8-inch sanitary sewer.

New Britain, Conn.—The Board of Sewer Commissioners, February 20, awarded contract for cement for the coming season's supply to the Swift & Upson Company, city; the department will use six car loads or more, and the company agrees to deliver it as the department needs it. The contract for 50 manhole heads or more, as the department may need, was awarded to the Sessions Foundry Company, of Bristol.

Miami, Fla.—Council has awarded contract for sewer in Avenue C and Second street to Fred Rutter for \$586.50; in Fifth street to George Baker, for \$578.34, and in Eleventh street to Fred Rutter for \$778.—F. H. Wharton, Mayor.

Grundy Center, Ia.—M. Tschirgi, of Dubuque, has secured the contract for constructing sewers at the following bid: 3,440 feet 6-inch pipe, 36 cents; 13,601 feet 8-inch, 41 cents; 4,200 feet 10-inch, 81 cents; 390 feet 12-inch, 62 cents; 500 feet 15-inch, 75 cents; 53 manholes, each \$40; 11 flush tanks, \$75 each; 1 septic tank, \$1,516; 4 tank manholes, \$35 each, and 175 feet of tank outlet, 70 cents; total, \$15,557. Totals of other bids received: M. Ford, Cedar Rapids, \$16,957; Peoples' Construction Company, Davenport, \$17,696; I. W. Turner Improvement Company, Des Moines, \$17,540; Dearborn & Jackson, Cedar Rapids, \$17,583; E. R. Harding Company, Racine, Wis., \$18,605; F. E. Kaminiski, Watertown, Wis., \$18,482; N. A. Camery, Harlan, \$18,459; Union Engineering and Construction Company, Chicago, Ill., \$19,332; W. M. Lang, Harlan, \$19,799; Geo. M. King, Des Moines, \$19,599; W. W. Cooley, Clinton, \$19,970; G. S. Redmon, Clinton, \$20,258; W. A. Edgar, Cedar Rapids, \$19,206; Guy E. Smith, Indianola, \$20,676; Cedar Rapids Construction Company, Cedar Rapids, \$21,417; H. E. Gardner, Grundy Center, \$21,599; J. O. Hughes & Co., F. C. Robison, \$21,436; Wm. Tunny, Joliet, Ill., \$21,833; Cook Construction Company, Des Moines, \$22,400; W. C. Fraser, Rochester, Minn., \$22,433; O'Farrell Contracting Company, Dubuque, \$23,238.—E. A. Cray, Town Engineer; Iowa Engineering Company, Clinton, Consulting Engineers.

Emporia, Kan.—Brown & Ferren have been awarded contract by the city for constructing a storm sewer through Humboldt Park and Lang & Ferren for constructing a lateral sewer between Sylva and East streets.

Louisville, Ky.—The Board of Sewer Commissioners, March 5, opened six bids for the construction of Section B. of the Castlewood sewer, the lowest being from Burke & Mungovan Company, of Louisville and Nashville, and Henry Bickel & Company, of Louisville. Other bidders were L. R. Figg & Company, of Louisville; Fruin-Colnon Construction Company, of St. Louis, Mo.; C. B. McCracken & Company, of Columbus, Ohio, and the Connelly Construction Company, of Cincinnati.

Bids for the construction of the Twelfth street sewer, contract No. 25, were opened by the Commissioners of Sewerage February 26, and the contract has been awarded to T. J. O'Connell Company, of Baltimore, Md., for about \$80,000; the work will consist mainly of building a reinforced concrete sewer about 3,900 feet long, from 16 feet to 27 feet deep, and including about 3,350 cubic yards of concrete and 320,000 pounds of steel.

Baltimore, Md.—Booth & Flynn, Ltd., Pittsburgh, Pa., submitted low bid for constructing storm water drains, Contract No. 6, and was awarded contract on the following bid: 240 feet excavation and refill for 114-inch horseshoe drain, \$1; 1,218 feet excavation and refill for 96-inch circular drain, \$3.20; 110 feet excavation and refill for 42-inch circular drain, \$4.25; 110 feet furnishing material and building 42-inch circular brick drain, \$5.25; 110 feet furnishing material and building 42-inch circular concrete drain, \$4.08; 22 feet excavation and refill for 36-inch circular drain, \$2.79; 22 feet material and building 36-inch circular brick drain, \$4.92; 1,005 feet excavation and refill for 24-inch circular drain, 95 cents; 1,005 feet furnishing and laying 24-inch vitrified pipe drain, \$1.23; 272 feet excavation and refill for 18-inch circular drain, 96 cents; 272 feet furnishing and laying 18-inch vitrified pipe drain, 78 cents; 571 feet excavation and refill for 15-inch circular drain, 47 cents; 574 feet furnishing and laying 15-inch vitrified pipe drain, 63 cents; 490 feet furnishing and laying 15-inch inlet construction, including excavation and refill,

\$1.05; 25 feet furnishing and laying 12-inch inlet construction, including excavation and refill, \$1.05; 180 cubic yards brick masonry in Portland cement mortar, \$15; 10 cubic yards vitrified brick masonry in Portland cement mortar, \$25; 1,040 yards concrete masonry, Class "A," \$6.80; 1,665 yards concrete masonry, Class "B," \$6.40; 10 yards concrete masonry, Class "C," \$6.50; 1,000 pounds corrugated or twisted steel bars, 4 cents; 300 feet excavation, furnishing and laying 6-inch underdrain, including gravel refill, 25 cents; 1,220 feet excavation, furnishing and laying 8-inch underdrain, including gravel refill, 28 cents; 10 M. feet B. M. sheeting, bracing or shoring left in place, \$16; 5 M. feet B. M. lumber in foundations, \$30; 50 cubic yards rock excavation, \$4.50; 4,000 cubic yards spreading embankment, not including material, 20 cents; 2 15-inch slants built in, \$2.50; 1 12-inch "Y" branch in place, \$2; 15 cubic yards excavation for bellmouths, including sheeting and shoring, \$3.50; 10 cubic yards excavation of extra depth, not including excavation for underdrains, \$1.50; 10 cubic yards gravel refill below subgrade, not including gravel around underdrains, \$2.25; 25 sets manhole frames and covers, complete, \$15; 160 linear feet brick manholes, complete, including excavation and refill, \$4.63; 160 feet drop manholes, complete, including excavation and refill, \$8.71; 100 feet drop well, complete including excavation and refill, \$10; 50 cubic yards excavation for drop wells, including sheeting and shoring, \$1.50; cast-iron pipe culvert under B. & O. R. R., complete, including excavation and refill (lump sum), \$600; 125 8-inch galvanized-iron manhole steps, 75 cents; 10 Class "A" inlets, not including heads, but including excavation and refill, complete, \$25; 7 Class "B" inlets, not including heads, but including excavation and refill, complete, \$25; 1 Class "C" inlet, not including heads, but including excavation and refill, complete, \$25; 5 Class "E" inlets, including gratings, excavation and refill, complete, \$73; 7 flush inlet heads for "A" inlets, including frame and cover, complete, \$18; 3 depressed heads for "A" inlets, including frame and cover, complete, \$18.50; 5 flush inlet heads for "B" inlets, including frame and cover, complete, \$18; 2 depressed heads for "B" inlets, including frame and cover, complete, \$18.50; 1 flush inlet head for "C" inlets, including frame and cover, complete, \$18.50; 20 linear feet furnishing and setting curbstones, including dressing, etc., \$2.50; 20 linear feet removing and re-setting curbstones, \$1.50; 10 square yards removing and relaying gutter and cobble pavement, 80 cents; 5 cubic yards stone masonry in Portland cement mortar, \$40; total amount of bid, \$37,400; value of time required to complete contract, at \$20 per day, \$2,400; total for comparison, \$39,800; number of working days required for completion, 120.

St. Louis, Mo.—Bids were received March 2 by the Board of Public Improvements for construction of sewers, and the lowest bid for the Harlem Creek Sewer District No. 1 was that of Fruin & Colnon Construction Company, at \$99,832, and for the Cora avenue sewer, the Wm. F. Reilly Construction Company, at \$6,244.—A. J. O'Reilly, President of the Board.

Asbury Park, N. J.—The United Paving Company, of Atlantic City, has been awarded contract for furnishing material and constructing sewage disposal works and the connection therewith of the city sewers and the sea outlet pipes, for which the following bids were received: United Paving Company, Atlantic City, \$27,273; McHarg-Barton Company, New York, N. Y., \$28,300; Northeastern Construction Company, New York, N. Y., \$32,092; B. G. Coon Construction Company, Wilkes-Barre, Pa., \$32,555; Merrill Ruckgaber Company, New York, N. Y., \$34,200; Francis J. Boas, 14 S. Broad street, Philadelphia, Pa., \$34,500; B. F. Sweeten & Son, Camden, \$43,044; City Wastes Disposal Company, Engineers, 150 Fifth avenue, New York, N. Y.; Wm. C. Burroughs, City Clerk.

Avalon, N. J.—Contract for about 7,400 linear feet terra-cotta sewer has been

awarded to Atlantic Construction and Supply Company, Bartlett Bldg., Atlantic City, for \$3,500.—R. L. Goff, Borough Engineer.

Woodbridge, N. J.—Bids were received, March 4, for the construction of a 12-inch vitrified pipe sewer at Keasbey, beginning at Smith street, at the northerly projection of the easterly line of a 50-foot street laid through the property of James Noe, and running to a sewer already constructed in Dahl street, and connecting there with another. The bids were as follows: Harry K. Leisen, \$875; Contractor Petersen, of Perth Amboy, \$906.30; John H. Leisen, \$843; A. K. Jensen, of Perth Amboy, \$937; Thomas F. Dunigan, \$859.32; Edgar & Dunigan, \$896; Contractor Hansen, of Keasbey, \$1,000.54; contract was awarded to John H. Leisen, the lowest bidder. G. W. Blum was appointed as inspector.

New York, N. Y.—The following are the bids opened March 10 by John F. Ahearn, President Manhattan Borough, for furnishing material and constructing sewer and appurtenances in West 177th street from Ft. Washington avenue to Riverside Drive, about 61,454 linear feet brick and stoneware pipe, sewer: Smith & Fitzgerald, \$29,006; Jos. Moore, \$25,975; W. J. Brennan, \$24,184; M. Marrone, \$20,635; Thos. A. Riley, \$18,945; Briggs & McLaughlin, \$27,014; B. Dunn, \$24,000; Haggerty Construction Company, \$19,575, and Walter J. Ford, \$24,692.

Akron, O.—Bids for the construction of a sewer in Long street were opened by the Board of Public Service March 9 and Jas. J. McGowan was low bidder, his bid being \$806.30; the other bidders and bids were as follows: John O'Neil, \$988.50, and E. McShaffrey & Son, \$1,197.

M. H. O'Toole was low bidder for the construction of a sewer in Washington street, his bid being \$612.20; the other bidders and bids were: John O'Neil, \$660.50; John Breen, \$679.30; Jas. J. McGowan, \$686.20; Matt McCourt, \$723, and E. McShaffrey & Son, \$758.

Hamilton, O.—Bids were received February 24 by the Board of Public Service for constructing sanitary sewers in portions of several streets, and the lowest bid received was that of the Garver Construction & Transfer Company, at \$29,689.—Chris. Pabst, Secretary.

Portsmouth, O.—Marion Shaw has been awarded contract by the city for constructing a brick sewer in Granview avenue.

Sandusky, O.—Henry Brothers have been awarded contract for sewer construction as follows: 700 feet 18-inch Parmeley reinforced concrete pipe, 2-inch shell, in 10-foot trench, loose rock excavation, with some ground water at \$1.45 per linear foot; 461 feet 12-inch vitrified pipe, d. s., in 7-foot trench, \$2.10; 600 feet 10-inch vitrified pipe, s. s., 6-foot trench, \$2; 10 feet 10-inch vitrified pipe, 4-foot trench, 60 cents; manholes, 6 to 10 feet deep, \$30; removing and replacing and maintaining brick pavement for one year, \$3 per square yard.—Clifford M. King, City Engineer.

Guthrie, Okla.—W. F. Power has been awarded the contract for the sewers at \$888.50 for District No. 46 and \$767 for District No. 47. Only one other bid was received, from the Tulsa Construction Company, which bid \$1,379.45 on District No. 45 and \$1,471.45 on District No. 47.

Narragansett, R. I.—John Bristow, of Narragansett Pier, has secured contract for constructing sewers for \$30,000.—Thos. G. Hazard, Jr., of Narragansett Pier, Engineer.

Nashville, Tenn.—The contract for pipe for the sewer to be built in West Nashville has been awarded by the Board of Public Works to Howard Motz & Company, of this city, at \$18.97 a ton. The contract for special castings was awarded to J. H. Fall & Company, at \$55 a ton f.o.b. Nashville. The contract calls for 1,041 tons of 18-inch, 580 tons of 16-inch and 210 tons of 6-inch pipe, and about 13 tons of special castings.

Denton, Tex.—Truehart & Jackson, of San Antonio, have secured the contract for constructing sewerage system for \$23,125.—Edw. F. Bates, Mayor.

WATER SUPPLY

Birmingham, Ala.—The proposition to secure a municipal water plant for Birmingham has gone to that extent that the City Council is considering the appropriation of \$5,000 for a survey of a canal from the Sipsey River, 30 miles north of this city; general project is to build a canal and water plant on a bond issue of \$5,000,000, already voted by the citizens of North Birmingham, which is to become a part of this city during the year.

Eufaula, Ala.—City will construct settling basin for municipal water works; cost, about \$2,000.

Mesa, Ariz.—City Trustees have passed an ordinance for the issuance of \$50,000 bonds for construction of a water works plant.—Arthur A. Jones, Clerk of Board.

Hoxie, Ark.—J. A. Hill, of Hoxie, is promoting the construction of water works.

Oceanside, Cal.—The Pacific Light and Power Company has plans for a reservoir at Warner ranch; cost, \$551,000.

Canon City, Col.—Council has authorized an additional \$100,000 bond issue to defray cost of constructing water works.

Norwich, Conn.—The Board of Water Commissioners will petition Council for an appropriation of \$20,000 to rebuild the present dam.

Wallingford, Conn.—City will issue \$35,000 bonds to extend mains to Yalesville and Tracy.

Jacksonville, Fla.—Council has authorized the Board of Bond Trustees to construct a powerful pumping station at the foot of Newman street; also named a Committee to confer with the Board of Trustees relative to the establishment of a high pressure water system; ordinance for the purchase of one or more fire steamers has been referred.

Jacksonville, Fla.—Citizens are urging the bonding of the city for \$50,000 for water and sewerage systems.

Jacksonville, Fla.—Superintendent Ellis has recommended that the water main system in West Riverside be improved; cost, \$16,067.20.

Valdosta, Ga.—Citizens will vote April 14 on \$60,000 improvement bonds; \$30,000 will be used in enlarging the reservoir, enlarging and extending the mains and increasing the number of electric lights.

Kempton, Ill.—City is planning to build a water works system.

Springfield, Ill.—City has decided to purchase an additional pump.—Superintendent Southwick.

Goshen, Ind.—City Clerk George H. Rimpler will receive bids for laying 6-inch water mains in Second and Third streets.

Warsaw, Ind.—The Winona Light and Water Company is considering building and installing a modern filtration plant.

Des Moines, Ia.—City has been petitioned to extend mains on various streets.

Manchester, Ia.—Citizens will vote March 29 on the purchase of the water tower.

Rhodes, Ia.—Citizens have voted to issue bonds for a water works system.

Woodward, Ia.—City is considering the constructing of water works.

Argentine, Kan.—Engineer William Barclay, 714 Minnesota avenue, Kansas City, Kan., has plans for a system of water works; the city and the present water company are trying to reach price basis for purchase of plant; the city will probably build if company refuses to sell.—C. W. Green, Mayor; E. Z. McCullough, City Clerk.

Hailestead, Kan.—Citizens will vote on water works bond issue.

Hailestead, Kan.—Burns & McDonnell, of Kansas City, Mo., have made preliminary surveys for water works.—A. J. Smith, City Clerk.

Plainville, Kan.—Plans have been completed by Engineers Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for a system of water works; cost, \$19,500.

Topeka, Kan.—E. R. Townsend, of Chicago, expert hydraulic and electrical engineer, has recommended the immediate improvement of the water works, installation of low service system and the providing of storage reservoir on pump house site and the installation of water mains on several streets.

Shelbyville, Ky.—The Shelbyville Water and Light Company will install complete new machinery to increase its facilities; expenditure will be \$10,000.

Walkersville, Md.—Dr. John Nicodemus, E. I. Jamison, Franklin D. Harshman, Lincoln D. Dinterman and others have organized a company to construct water works; cost, \$20,000.

Boston, Mass.—Fire Commissioner Parker and Chief Mullen are in New York for the purpose of witnessing a test of the \$3,000,000 high-pressure salt-water system installed there; the local fire officials intend to have brought into readiness the mile of high-pressure salt-water mains which have

Muscataine, Ia.—Following are the bids received for constructing section of main trunk sewer from Eleventh Street to Fullam avenue:

CONTRACTOR	8 ft. x 7 ft. 8 in. sewer	Concrete in place	Man-hole	Total	Remarks
	503 lin. ft.	25 cu. yds.	1		
Peter Wingerter, concrete.....	\$9.88	\$4.00	\$28.00	\$5,097.64	
Peter Wingerter, brick.....	12.25	4.00	28.00	6,289.75	
A. Korneman, concrete.....	7.10	4.00	22.50	3,693.80	
R. K. Smith, concrete.....	11.00	5.50	25.00	5,695.50	
J. H. Selden, concrete.....	10.35	6.40	17.95	5,384.00	
Un. Engr. & Const. Co., concrete	9.20	5.25	35.00	4,793.85	
A. Blasings, brick.....	8.40	5.50	22.00	4,384.70	
Engrs. estimate, concrete.....				3,950.00	

NOTE.—The price per lin. ft. of sewer includes concrete sewer in place, 1.3 cu. yds. per ft., and excavation and back-filling, 6 cu. yds. per ft. of sewer.

Contract awarded under concrete plan to A. Korneman, March 4, 1909.
JAMES J. RYAN, City Engineer.

remained unused on Central and Congress streets for over ten years; mains originally cost about \$30,000.

Lanesboro, Mass.—Citizens are considering a proposition to obtain a municipal water supply from up toward Savage Mountain.

Marblehead, Mass.—City will improve the present water supply.

Methuen, Mass.—Town has voted to extend water pipe on Hampshire street.

Rockport, Mass.—Town is considering extension of water service to Long Beach.

Somerset, Mass.—The Sub-Committee on Water Supply has estimated cost of stand-pipe, laying mains, etc., at \$98,500.

Westerly, Mass.—Citizens are considering the extension of the water system to Pleasant View; distance, 1½ miles.

Coleman, Mich.—City has selected Riggs & Sherman Company, 613 The Nasby, Toledo, O., to prepare plans and specifications for municipal water works.

Saginaw, Mich.—C. A. Sherping, Chief Engineer, East Side water works, has recommended to the Water Board repairs to the station, including installing new pumping engine and boilers; W. R. Stewart, Chief Engineer, West Side water works, recommends the purchase of a 6,000,000-gallon engine and the erection of a new brick smoke-stack.

Minneapolis, Minn.—The State Legislature will issue bonds sufficient to cover the cost of providing a pure water supply.

Montevideo, Minn.—Bids will be received March 29 for \$12,000 water works bonds.—J. M. Severns, City Clerk.

Stillwater, Minn.—Council will appoint two Aldermen to act in conjunction with Mayor J. G. Armon and an expert to investigate and ascertain the probable cost of building a new plant, with a view to municipal ownership.

Indianola, Miss.—City has accepted plans by Huston & Cunningham, Consulting Engineers, 725 Maison Blanche Bldg., New Orleans, La., for improvements to water works, including gasoline engine, 60-h.p., and a 250,000-gallon reservoir, brick power house, about 1,500 feet of 8-inch water pipe, including river crossing; contracts will be let soon; cost, \$10,000.

Jackson, Miss.—The County Supervisors have granted a franchise to R. L. Bradley for construction of water works in a western suburb; it will be simply an extension of city mains into outside territory.

Meridian, Miss.—Citizens will vote March 22 on \$250,000 bond issue to pay for the water works system.

Gallatin, Mo.—City will expend about \$8,000 in water works improvements.

Glasgow, Mo.—Citizens have voted \$8,000 bonds for extension and improvement of water works.

Auburn, Neb.—The citizens have voted by a big majority to issue bonds for constructing a system of water works and will soon be in the market for all supplies.—Address City Clerk.

Elmer, N. J.—Citizens will vote April 15 on construction of municipal water works.

Hawthorne, N. J.—The Hawthorne Water Company has been formed by Jas. C. Cameron, of Rutherford; H. L. Wells, of Pompton Lakes, and Nicholas E. Betajeman, of New York, N. Y., to construct water works.

Hoboken, N. J.—The Board of Trade has asked for a main through the factory district.

Oaklyn, N. J.—Borough Engineer Geo. Pfeiffer has submitted maps, plans and specifications for a municipal water plant; Engineer has recommended installation of a pumping station, two artesian wells, two triplex pumps, two gasoline engines, 35 hydrants, 20,000 feet of service mains, and a standpipe 12 feet in diameter by 110 feet high; cost \$25,000; election will be held on \$25,000 bonds.

Cohoes, N. Y.—Assembly has passed the bill authorizing the issue of bonds for the construction of a filtration plant to cost \$25,000.—M. D. Hanson, Mayor.

Lockport, N. Y.—Mayor Minard has recommended the increasing of the size of the mains for fire protection.

New York, N. Y.—William E. Paine, 16 Beaver street, New York, and Benjamin B. Odell, Jr., of Newburgh, N. Y., have been appointed by the Supreme Court as receivers of the Thomas McNally Company and have been directed by the court to complete the construction of the Catskill aqueduct from Hunters Brook, Westchester County, to Foundry Brook, Putnam County; receivers will sublet the contract in sections; about one-tenth of the work under the contract has been completed; contract price, \$4,000,000.

New York, N. Y.—An extension of the high-pressure fire-fighting system has been planned by I. M. De Varona, Chief Engineer, Department of Water Supply, Gas and Electricity; system will be installed by 1910; cost, \$1,800,000; Department has decided to increase the high-pressure capacity at the

stations at Ninety-eighth street, 179th street and at Jerome avenue, the Jerome avenue station improvement to include an extension to supply the Williamsbridge section; also in order to increase the water supply for Long Island City the drive wells at Bayside are to be enlarged and the pumping station is to be remodeled; filter beds are to be built to insure the purity of the supply.

Niagara Falls, N. Y.—The Board of Water Commissioners has approved plans for the construction of a new water works and filtration plant; cost, \$310,000 for the water works, \$355,000 for the filtration plant.—A. C. Douglass, President.

Niagara Falls, N. Y.—Citizens have voted to expend \$717,000 for a pure water supply, the work to include construction of new pumping station, laying of an intake pipe 2,100 feet into river, building of an intake crib, installation of slow sand filters capable of supplying 15,000,000 gallons of water daily.

White Plains, N. Y.—Bids will be received April 5, 8 p. m., for \$27,000 water bonds.—Frederic S. Barnum, President Board of Trustees.

White Plains, N. Y.—The Board of Trustees has approved request of the Board of Water Commissioners for an appropriation of \$27,000 with which to begin the construction of water mains in a number of streets.

Columbus, O.—Council is considering an ordinance for the sale of \$175,000 for extension of the water mains.

Crooksville, O.—Both the Muskingum Water Company, composed of local men, and A. W. Evans, of Zanesville, applied for the franchise to construct a water works system.

Delta, O.—City has engaged the Riggs & Sherman Co., 613 The Nasby, Toledo, to prepare plans and specifications for municipal water works.

Lima, O.—The Water Works Department will expend \$12,000 in extensions.

Logan, O.—Council will sell \$5,000 bonds for the extension, enlargement and improvement of the water works system.—D. V. Thurnese, Mayor.

Mount Healthy, O.—George Hornung & Son, Johnston Bldg., Cincinnati, O., Consulting Engineers, are preparing plans for a water works system; cost, \$50,000.

Urbana, O.—Council is considering a site for a pumping station for the municipal water works plant.

Youngstown, O.—The Bucyrus Water Company has asked Council to renew its expired franchise.

Elk City, Okla.—Contract will be let about April 10 for a reservoir with concrete core wall and spillway, and 2,100 feet of storm water sewer extension, 24 and 30-inch pipe.—J. W. Flournoy, City Clerk.

Mounds, Okla.—City has not yet selected Engineer for the construction of its proposed water system.—M. C. Berry, care City Clerk.

Ryan, Okla.—The Ryan Commercial Club will soon receive bids for the installation of a system of water works.—J. A. May, Secretary.

Waurika, Okla.—Citizens have voted \$25,000 bonds for extension of water works and \$5,000 for larger wells for water supply.

Portland, Ore.—The City Water Board is considering the improvement of the water service in the vicinity of Washington and Twenty-third streets.

Portland, Ore.—City Water Board will soon let contract for the second pipe line from Bull Run to the city; Engineer D. D. Clarke has estimated the cost at \$1,500,000.

Bethlehem, Pa.—The Water Works Committee has been authorized to secure bids for the purchase of one ton of ½-inch lead pipe.

Port Royal, Pa.—Borough has granted a franchise to E. R. Heisey, of York, for a water system.

Punxsutawney, Pa.—The Punxsutawney Water Company will install a 1,000,000-gallon gravity filter plant; cost, \$20,000.—Chas. E. Rutz, Superintendent.

White Salmon, Pa.—Citizens have voted a \$60,000 bond issue to install a water works system.

Gaffney, S. C.—Citizens will vote March 19 on bond issue to extend and improve water works system.

Clark, S. D.—Citizens will vote on issuing bonds to sink a deep well.

Fayetteville, Tenn.—Legislature is considering bill authorizing city to issue \$30,000 of bonds for water works and street improvements.

Jellico, Tenn.—Plans have been prepared by Engineers J. B. McCrary & Co., Atlanta, Ga., for a system of water works.—B. J. Newton, Recorder.

McKenzie, Tenn.—Citizens will vote in May on construction of water works.—F. D. Walpole, City Recorder.

Memphis, Tenn.—The Legislative Council has awarded \$250,000 water bonds to the Bank of Commerce.

Mt. Pleasant, Tenn.—J. G. Jackson and F. DeMarco, Mt. Pleasant, have been se-

lected as engineers for water works, electric light plant and sewer system.

Nashville, Tenn.—The Board of Public Works will receive bids March 18, 3 p. m., for laying 25,780 additional feet of water pipe.

Tate Spring, Tenn.—Thos. Tomlinson will purchase water filter with capacity of 10,000 gallons per hour.

Childress, Tex.—The Fort Worth & Denver City Railway Company will improve water service providing more adequate fire protection for yards and shops; plans provide for the construction of steel tower and tank, laying of complete system of 8-inch mains; also the installation of pumping plant at Lake Scott; estimated cost, \$25,000.—R. C. Gowdy, Resident Engineer, Fort Worth.

Cleburne, Tex.—Representatives of the bondholders of the Cleburne Water Works and the city are endeavoring to get together with a view of making improvements in the water system; Judge Poin-dexter is representing the city in the matter.

Dallas, Tex.—The Colonial Hill Improvement League has indorsed resolution in favor of issuing \$500,000 water works bonds and the laying of a 6-inch water main.

Hillsboro, Tex.—Citizens will vote April 6 on \$12,000 bonds for improvement and extension of water works and sewer system.

Houston, Tex.—F. L. Dormant, Special Engineer employed by city, is preparing plans for various municipal improvements, including extension of water mains; \$100,000 bonds have been voted.—T. C. Tarver, City Engineer.

Houston, Tex.—In connection with the proposed extensions and improvements to be made during the new fiscal year of the city government, one of the important matters will be the question of establishing a direct pressure system as a feature of the Fire Department; this matter has been under consideration by some of the Commissioners at various times during the last two years; Chief Olbre will formally call the attention of the Commissioners to the subject in his annual report and make a recommendation that the system be inaugurated this year; Commissioner Appleby recommended the direct pressure system two years ago.

Rotan, Tex.—Charles Hamilton, General Manager Texas Central Railroad, Waco, Tex., will construct water works.

Terrell, Tex.—Council has decided to give Southwest Terrell better fire protection by laying larger mains.

Mayfield, Utah.—Citizens have incorporated a company for the installation of a water works system; cost, \$6,000.

Salt Lake City, Utah.—Bids for the brass work for the year have been rejected by Committee on account of uncertainty in the tenders as to the matter of weight; bids will be readvertised for.

Salt Lake City, Utah.—City Engineer Kelsey has recommended the installation of a filtration plant in connection with present water works system; a distribution reservoir of not less than 10,000,000 gallons capacity above Mt. Olivet cemetery and a 5,000,000-gallon one at the intake of the high line.

Richmond, Va.—Mayor Richardson has recommended the erection of a water tower or elevated tank near Eleventh and Cary streets.

Rocky Mount, Va.—City will construct water works.

Urbanna, Va.—City will grant R. H. Milligan a franchise for water works.—W. H. Ryland, City Clerk.

Burlington, Wash.—Anacortes parties are considering a scheme to supply Burlington, La Conner and Mount Vernon with water.

Chehalis, Wash.—Council is considering a \$40,000 bond ordinance for the purchase of the old water works system.

Othello, Wash.—Local and Spokane men are organizing a company to install a \$25,000 water works system.

Valley City, Wash.—Frank C. Atkinson has filed a petition for a franchise to establish water works systems in Pacific City and in this city.

White Salmon, Wash.—City will issue \$60,000 for proposed water works.

Butternut, Wis.—Estimates are being prepared for construction of water works.

Cheyenne, Wyo.—Bids will be received April 5, 3 p. m., for furnishing 10,000 tons of cast-iron pipe; 200 tons of pig lead and 15 tons of jute oakum.—C. C. Carlisle, City Engineer.

Kingston, Ont., Can.—City is considering the extension of the water works system to all houses; estimated cost, \$29,000.

Niagara Falls, Ont., Can.—The Water Commissioners are considering the construction of a 12-inch main in Queen Victoria Park.

Toronto, Ont., Can.—Specifications are completed for the proposed filtration plant at the Island.—Allen Hazen, Consulting Engineer, New York, N. Y.; Chas. H. Rush, City Engineer.

BIDS RECEIVED AND CONTRACTS AWARDED

Bisbee, Ariz.—The contract for 75 hydrants was let to the Ludlow Company of New York, as was the contract for valves; the valve box bids will be advertised for again as the drop in cast-iron will lower the bids from those first opened; the bids on pipe, and the engines, motors and pumps were laid over until a future meeting; new bids are invited on tanks.

Among the bids for hydrants and valves several were lower than that of the Ludlow concern, but the Ludlow products were considered the best in the long run.

The contract to furnish the pipe was awarded to the United States Pipe Company, as that company's bid was the lowest. The committee appointed to secure freight rates for the city succeeded in getting a reduced rate from Birmingham, Ala., over the Alabama & Great Southern by the way of New Orleans & Northeastern and the Southern Pacific. The S. P. will deliver the pipe at Benson and the E. P. & S. W. will bring it to Bisbee. The best rate that could be secured either from Pueblo or Birmingham by any other route was \$14, and the Alabama & Great Southern made a rate of \$12 a ton. The rates given the city by the Alabama & Great Southern will result in a saving of \$4,280 to Bisbee over the lowest rate named by any of the other roads; other bids in hand for the pipe were from the C. F. & I. Company of Pueblo, Copper Queen Company of Bisbee, United States Pipe Company of Chicago, Dicus Plumbing Company of Bisbee, and H. R. Boynton of Los Angeles.

For 57,000 pounds of lead the Copper Queen and the Dicus Company of this city had bid the same; W. H. Brophy suggested that they match coins for it; Dicus won the match; Alderman Shattuck made a motion that the winner of the gambling game be awarded the contract, and as Dicus had matched the Copper Queen and won the match he was given the contract.

Colton, Cal.—Bids were opened, March 1, for furnishing three sizes of pipe for the water service of the city, and the bids of the Macey Manufacturing Company of Los Angeles was accepted, being 4-inch, 17 cents per foot; 6-inch, 24 cents per foot; 10-inch 37 cents per foot. Bids were in from the Baker Iron Works of Los Angeles and the Colton Hardware Company.

Lamar, Col.—R. Clough, of Colorado Springs, has secured contract for improvement work for the Chivington Canal Company.

Rock Island, Ill.—Thos. Lightbody, of Youngstown, O., and Wm. Henderson, of Warren, O., are reported to have secured contract for construction of the mechanical filtration plant for about \$130,000; totals of all bids received were given in March 10 issue.

Norton, Kan.—Following are the bids received by W. R. Tasker, Water Commissioner, for furnishing material for new extensions:

Pipe: U. S. Cast Iron Pipe and Foundry Company, Chicago, Ill., 12-inch, \$30.45; 6-inch, \$31.45; 4-inch, \$32.45; specials, 2% cents. American Cast Iron Pipe Company, Kansas City, Mo., 12-inch, \$32.50; 6-inch, \$33.20; 4-inch, \$34.70; specials, 3 cents. A. M. Ozburn, Chicago, Ill., 12-inch, \$33.45; 6-inch, \$33.70; 4-inch, \$34.70; special, 3 cents. James B. Clow & Sons, Chicago, Ill., 12-inch, \$34.45; 6-inch, \$34.45; 4-inch, \$35.45; specials, 3 cents. Demick Pipe Company, Birmingham, Ala., 12-inch, \$36; 6-inch, \$36; 4-inch, \$36; specials, 3 cents.

Valves and Fire Hydrants: Builders' Supply Company, Kansas City, Mo., fire hydrants, \$23.95; 12-inch gate, \$33.25; 6-inch gate, \$8.50; 4-inch gate, \$5.45; 3-inch gate, \$3.95, 2-inch gate \$2.69. James B. Clow & Sons, Chicago, Ill., fire hydrants, \$26; 12-inch gate, \$36; 6-inch gate, \$11.75; 4-inch gate, \$7.50; 3-inch gate, \$6; 2-inch gate, \$2.60. Chapman Valve Mfg. Company, St. Louis, Mo., fire hydrants, \$22.92; 12-inch gate, \$28.74; 6-inch gate, \$9.20; 4-inch gate, \$6.40; 3-inch gate, \$5; 2-inch gate, \$2.81. English Tool and Supply Company, Kansas City, Mo., fire hydrants, \$25; 12-inch gate, \$31.50; 6-inch gate, \$10.75; 4-inch gate, \$6.65; 3-inch gate, \$6; 2-inch gate, \$2.80. Ludlow Valve Mfg. Company, Kansas City, Mo., fire hydrants, \$29; 12-inch gate, \$35.75; 6-inch gate, \$13; 4-inch gate, \$7.50; 3-inch gate, \$6.50; 2-inch gate, \$2.95. U. S. Water and Steam Supply Company, Kansas City, Mo., fire hydrants, \$22.70; 12-inch gate, \$34.20; 6-inch gate, \$8.35; 4-inch gate, \$5.40; 3-inch gate, \$4; 2-inch gate, \$2.70.

Two-inch Pipe, Lead, Jute: James B. Clow, Chicago, Ill., 2-inch pipe, 15.40 cents per foot; lead, 5½ cents per pound; jute, 6 cents. U. S. Water and Steam Supply Company, Kansas City, Mo., 2-inch pipe, 15 cents per foot; lead 4½ cents per pound; jute, 4½ cents, all the above f. o. b. Norton, Kansas. Kansas City Pump Com-

pany, Kansas City, Mo., 2-inch pipe, 14 cents per foot; lead, 5 cents per pound; jute, 4 cents. W. B. Young Supply Company, Kansas City, Mo., 2-inch pipe, 12.60 cents per foot; lead 4¼ cents per pound; jute, 4½ cents.

Contracts awarded as follows: For the cast-iron pipe, the U. S. Cast Iron Pipe and Foundry Company, of Chicago, Ill. There was 4,120 feet of 12-inch, 500 feet of 6-inch, 10,500 feet of 4-inch, 7,000 pounds cast-iron specials. Fire hydrants and Gate valves, the English Tool and Supply Company, of Kansas City, Mo., three 12-inch, three 6-inch, 18 4-inch, two 3-inch, 35 2-inch, one 6-inch check. All the above are gate hub and nut except the 2-inch, one 12-inch and the check; 25 4-inch fire hydrants. For the lead, jute and 2-inch pipe, the U. S. Water and Steam Supply Company, of Kansas City, Mo., 16,000 pounds pig lead, 1,400 pounds tarred jute, 7,000 feet 2-inch galvanized pipe, with protecting couplings.

Duluth, Minn.—The Water and Light Board has awarded contract for a double-acting triplex pump for the new station of the middle water system at 15th avenue E and 6th street, to the General Electric Company, of Schenectady, N. Y., for \$6,400.

Ft. Assiniboine, Mont.—Bids were received March 4 for constructing a 150,000-gallon steel water tank and trestle as follows: Midland Bridge Company, Kansas City, Mo., \$19,000 and \$12,689; Chicago Bridge & Iron Works, Chicago, Ill., \$16,100; St. Paul Foundry Company, St. Paul, Minn., \$14,470; Des Moines Bridge & Iron Company, Des Moines, Ia., \$15,100, \$14,900 and \$14,800; Penn Bridge Company, Philadelphia, Pa., \$13,587; Canton Boiler & Engineering Company, Canton, O., \$12,327, and Minneapolis Steel & Machinery Company, Minneapolis, Minn., \$13,300 and \$12,285.—J. E. Sawyer, Chief Quartermaster, U. S. A., St. Paul, Minn.

New York, N. Y.—Bids were opened, March 9, by the Board of Water Supply for the construction of a portion of the Catskill aqueduct, consisting of about one mile of tunnel on the hydraulic gradient, known as Bull Hill tunnel, 17 feet high by 13 feet 4 inches wide inside, lined with concrete; and two short stretches of plain concrete conduit, known as cut-and-cover aqueduct, at the ends of the tunnel, about ¼ mile long, 17 feet high by 17½ feet wide inside, situated in the town of Philipstown, Putnam County: Dravo Contracting Company, Lewis Block, Pittsburg, Pa., \$738,424; Bradley Contracting Company, 1 Madison avenue, New York, \$872,005; Metropolitan Contracting Company, \$901,233; Pattison & Company, Pittsburg, Pa., \$824,942; T. Burghard, Buffalo, N. Y., \$1,032,770; Phoenix Construction Company, 41 Park Row, New York, \$1,038,867; Degnon Contracting Company, 60 Wall street, New York, \$959,037; Glydon Contracting Company, 2 Rector street, New York, \$1,162,967; American Pipe Manufacturing Company, Philadelphia, \$1,058,095; Millard Construction Company, Philadelphia, \$915,021; John C. Rodgers, 125th street, New York, \$852,649; S. Pearson & Sons, Long Island City, \$85,451; Snare & Triest, 114 Liberty street, New York, \$823,417; Gore-Meenan Company, 206 Broadway, New York, \$921,800; Mason & Hanger, Richmond, Ky., \$951,581.—J. Waldo Smith, Chairman, Engineering Board.

The following bids were received, March 8, by John H. O'Brien, Commissioner of Water Supply, Gas and Electricity, for furnishing, delivering and laying water mains in Gleason, Grace, Green, Lyon, Parker, St. Peters and Tremont avenues, and in 172d, 173d and 174th streets, the Bronx (east of the Bronx River): Joseph Burns, 147 East 125th street, \$65,037; G. Galluchi, \$70,986; James H. Rogers, \$67,484; Louis D. Gregory, \$66,688; Henry E. Fox, \$71,364; Hanover Contracting Company, \$75,886; Daly & McBean, \$78,300; Wilton Contracting Company, \$69,393; Joseph Molea, \$68,972.

Also for furnishing, delivering and laying water mains in White Plains road, Borough of the Bronx (east of the Bronx River): O'Leary & Flannigan, \$71,009; Hanover Contracting Company, \$88,994; Daly & McBean, \$89,616; James M. Rogers, \$74,737; Louis D. Gregory, \$73,879; Joseph Burns, 147 East 125th street, \$79,126; Henry E. Fox, \$80,819; G. Galluchi, \$81,242; Anna & Lyons, \$83,707; Wilton Construction Company, \$79,066; Joseph Molea, \$81,826.

Rochester, N. Y.—The Board of Contract and Supply, March 9, awarded contract for stop-gate boxes and jackets to Eureka Foundry Company for \$974.75. Agreements entered into by the City Engineer and Whitmore, Rauber & Vicinus and Brayer & Albaugh for extending water mains across the canal at Lyell avenue and Allen street were ratified.

Cincinnati, O.—The Board of Public Service, March 5, awarded to the U. S. Cast-Iron Pipe & Foundry Company contract to furnish the city with 70 tons of cast iron pipe for \$29,944.

Youngstown, O.—The Board of Public Service, March 5, awarded contracts to the following low bidders: Pipe and specials, Ashland Iron & Steel Company, pipe \$23.95 per ton; specials, \$55 gross ton; valves, Roe-Stephens Manufacturing Company, \$1,250; fire hydrants, Chapman Valve Company, \$26.50; pig lead, Wayneburg Plumbing Company, 10 tons at \$4.39 per 100 pounds; curb boxes, Farman Brass Company. The Ridge avenue improvement contract was let to Anthony O'Horo, low bidder.

Ft. Getty, R. I.—Darling & Slade, 56 N. Main street, Fall River, Mass., has secured contract for water supply system for Ft. Getty at \$5,459, and John F. Johnston Company, 371 Central street, Fall River, Mass., for sewers at \$235; bids received were given in March 3 issue.—Capt. Willis C. Metcalf, Quartermaster.

Spartanburg, S. C.—The contract for 2,000,000-gallon pump and machinery for the city pumping station was let, March 6, to the Fred M. Prescott Steam Pump Company for \$8,840; the pump ordered is a "Corliss," and it is said that it will cut the running expenses of the machinery from \$3,600 per year to between \$1,400 and \$1,500 on the present consumption of water.

Spartanburg, S. C.—The contract for the boiler for the city water works station has been let to the Erie City Iron Works, of Erie, Pa., through Thos. B. Whitted, of Charlotte, southeastern manager; the boiler is to cost \$2,100, with stack; it will be shipped within sixty days; as soon as it arrives the water works station will be enlarged for the new machinery; bids received were given in March 10 issue.

Nashville, Tenn.—The Board of Public Works opened bids, March 4, on 500 curb boxes, to be used for private connection with the water main system, and the contract was awarded to the Cumberland Foundry and Manufacturing Company and the Robert Jakes Foundry Company, local bidders. The bids were as follows: Nashville Plumbing Company, 84 cents; Cumberland Foundry and Manufacturing Company, 80 cents; Robert Jakes Foundry Company, 80 cents; Nashville Foundry Company, 85 cents; Avondale Foundry Company, 80 cents. Three bids were the same, but the Avondale Company not being a home company, the contract was awarded one-half to each of the other 80-cent bidders.

Brownwood, Tex.—City has awarded contract to Hood & Staggs at \$4,440 for building pump station at city water works; structure to be of brick; foundation to be raised to height of six feet and filled in, in order that concrete floors can be used.

Oak Cliff, Tex.—C. W. Olcott, of Dallas, has contract at \$1,101 for laying water mains.

Temple, Tex.—The City Water Commission has let a contract to a Fort Worth firm for hot water pipe, valves and hydrants to be used in lowering and changing pipes in the business district within the part about to be paved; about 9,000 feet of 8-inch pipe will be laid to replace the old pipe and steamer fire hydrants will replace the old style in the business section of the city.

Salt Lake City, Utah.—Bids were opened by the Board of Public Works, L. C. Kelsey, City Engineer, February 26, for the construction of a reinforced concrete conduit and culvert at Twelfth South street across Parley's Creek, and contract was awarded to Shea & Anderson, city, for \$2,163.50; construction of a reinforced concrete conduit north of Mill Creek, contract was awarded to Shea & Anderson, \$7,437.79; also construction of North Temple street aqueduct, contract was awarded to Davis & Heuser, city, for reinforced concrete plan, for \$48,252; the details of the last-named work follow: Excavation and back filling, 4,500 cubic yards, at 90 cents; excavating, 7,000 cubic yards, at 60 cents; concrete, in place, 3,355 cubic yards, \$9.80; furnishing and setting reinforcement, 177,200 square feet, at 4 cents; furnishing and setting six special manhole covers and frames, at \$25 each; resetting one manhole cover, \$6; furnishing and setting bumper, complete, \$10; furnishing and setting pipe railing, doors and steel work, complete, \$65; other bids were: P. J. Moran, \$51,178.50; James Kennedy Construction Company, \$52,462; A. M. Blodgett Construction Company, \$53,728.30; J. D. Hanley, \$55,960.66; Shea & Anderson, \$57,123.25; McDonald & Mellen, \$58,855.50; V. P. Strange, \$57,388. Bids on plain concrete follow: Davis & Heuser, \$48,500; P. J. Moran, \$51,175; James Kennedy Construction Company, \$50,742; A. M. Blodgett Construction Company, \$51,147.70; J. D. Hanley, \$54,037; Shea & Anderson, \$55,519; McDonald & Mellen, \$57,389; V. P. Strange, \$58,875.

Tacoma, Wash.—The following are the bids opened Feb. 26 for construction of a 22-inch stay pipe line to connect Station C with the new standpipe on Fletcher Heights: W. J. Murphy, \$48,373, and the

Keasal Construction Company, \$51,682. Engineer's estimate, \$43,264; new bids may be called for.

Milwaukee, Wis.—A separate contract has been awarded for putting the main under the river to the David West Construction Company at \$15 per foot; the distance is 423 feet.—Chas. J. Poetsch, City Engineer.

LIGHTING AND POWER

Eureka Springs, Ark.—The Citizens Electric Company is considering the purchase of a 300-kw. d.-c. turbo-generator and a 300-kw. a.-c. turbo-generator.

Heber, Ark.—The Heber Light and Power Company will install machinery capable of furnishing town of 5,000 inhabitants; capital, \$10,000.—J. M. Covey, Secretary.

Oroville, Cal.—The Sierra Electric Company has applied to the Board of Supervisors for a franchise to erect and maintain power lines in Butte County.

Quincy, Cal.—J. E. Saupear is promoting the erection of an electric light and power plant on Taylor Creek.

San Jacinto, Cal.—The owner of the Hemet Dam, Mr. Whittier, will expend \$1,000,000 on an electric power plant that he will install just below the dam; electricity will be generated for electric lighting and power purposes throughout the San Jacinto valley.

Sierra Madre, Cal.—Bonds, \$80,000, will be sold for construction of an electric plant.

Americus, Ga.—Council has decided to call an election on \$40,000 bonds to establish a municipal lighting plant in conjunction with the city water works.

Griffin, Ga.—Council has granted a gas franchise to a local company promoted by W. J. Kincaid and J. J. Mangham.

Georgetown, Del.—A Council which will be in favor of substituting electric lights for the present gas lighting system will be chosen at the coming election.

Washington, D. C.—A report has been received from an American consul in the Levant in which it is stated that a prominent merchant has recently opened a department store in the city in which the consulate is located, the first store of its kind in that region. The consul states that it would be worth while for American manufacturers to send the proprietor catalogues and price lists of novelties of all kinds; also telephone and electric light equipment.—Address No. 3153, Bureau of Manufactures.

Jacksonville, Fla.—The Chairman of the Board of Trustees has been authorized to purchase the necessary oil burners as equipment for the lighting and water plants; \$900 to \$1,000 will be expended.

Jacksonville, Fla.—City is considering the replacing of 150-ampere open arc lights with 150 Tungsten fixtures with lamps; petitions have been received for an additional light at Ninth and Walnut, Tenth and Walnut streets and Cherry avenue.

White Springs, Fla.—The Suwanee River Electric Power Company is making active preparations for the construction of a power plant and dam at the Suwanee River shoals; plan is to furnish electricity within a radius of 75 miles; capital, \$1,000,000. Officers are: W. B. Owen, President; G. R. Lynn, Vice-President; J. H. Phillips, Secretary and Treasurer, and D. L. Zeigler, Consulting Engineer and General Manager.

Valdosta, Ga.—Citizens will vote April 14 on \$60,000 improvement bonds; \$30,000 will be used for increasing the number of electric lights, the enlargement of the reservoir and the extension of water mains.

Meridian, Ida.—The Idaho-Oregon Power Company has completed preliminaries for the right-of-way for the power line between this city and Boise.—F. M. Housch, Representative.

Bowen, Ill.—City has granted a franchise to E. E. Bennett for an electric light plant.

Moline, Ill.—Council is considering municipal lighting of the city.

Hammond, Ind.—The Northern Indiana Gas and Electric Company will install a large plant to supply the cities of Hammond, East Chicago, Whiting, Michigan City and numerous towns and villages adjacent with light, heat and power.—Paul A. Neuffer and Harry H. Phillips, Directors.

Indianapolis, Ind.—Plans are being made upon which bids will be asked for the construction of a power plant at the Reform School for Girls; cost, \$16,000.—Mrs. Emma L. Elam, Chairman Board of Trustees.

Monticello, Ind.—William Thorn has formed a company to construct a dam on the Tippecanoe River and a hydraulic plant to generate electricity for lighting and power purposes.

Princeton, Ind.—The Weber Grist Mill has been leased by John Graves, of Paris, Ill.; water will drive dynamo to furnish power for the mill, also light the streets of Patoka with electricity.

Charles City, Ia.—Citizens will vote on the granting of a franchise to the Runner Gas Company for a gas plant.

Grinnell, Ia.—Louis H. Rinefort and Oscar B. Matthews have applied for a franchise for a gas plant.

Lexington, Ky.—Council has granted a lighting and heating franchise to Pike Campbell, proprietor of the Fifth Avenue Hotel; light and heat will be supplied to hotel and a few of the neighbors.

Houma, La.—Anderson Offutt, Electrical Engineer, New Orleans, has been retained to superintend construction of municipal light plant.

New Orleans, La.—Alexander Hay, 127 Carondelet street, is considering purchase of lighting fixtures.

New Orleans, La.—The Busch-Everett Company is seeking a franchise to pipe natural gas from the Caddo gas and oil fields to New Orleans, a distance of 325 miles; \$7,500,000 will be expended.

Pittsfield, Mass.—The Pittsfield Electric Company will begin work installing an underground conduit for wires from its works at the corner of Cottage Row and Renne avenue, through a small portion of the business section of the city early in May; cost, \$50,000.

Rockport, Mass.—Town has voted to install lights at nine points.

Sturgis, Mich.—Council has adopted a resolution that application be made to the Board of Supervisors of St. Joseph County that permission be granted to the city of Sturgis to construct a dam across the St. Joseph River for the purpose of developing 2,000 horsepower for light, heat and power uses.

Delano, Minn.—City will install a new electric light plant.

Hastings, Minn.—Council has passed first reading ordinance granting the local electric light franchise.

Red Lake Falls, Minn.—Council has granted the Red Lake Falls Electric Light Company an extension of its franchise for five years.

Virginia, Minn.—The Virginia Light and Water Company is considering improvements to its system during the coming year, which will involve an expenditure of about \$75,000.—O. H. Griggs, Virginia, Manager.

Charleston, Miss.—The Charleston Light & Power Company has been incorporated to construct and operate electric light plant; capital, \$10,000.—J. H. Caldwell, W. B. Burke and W. G. Harvey, Incorporators.

Meridian, Miss.—The Board of Council has requested the Water Commission to at once furnish the Board with facts and figures covering the following points: The feasibility of establishing a municipal lighting plant to be operated in connection with the water system; the probable cost of such plant with a capacity of not less than 500 street lights; the length of time necessary to build and equip such a plant; the probable cost per month of maintaining and operating such plant so established and furnishing not less than 500 lights; also such other information on the lines indicated as may be of use in placing the matter in a concrete and intelligent form.

Ozark, Mo.—The Water Power Light Company will increase the output of its plant at a cost of about \$5,000; equipment will include 50-kw. alternating-current generator, water turbine and possibly a 100-h.p. automatic engine; company may add a storage battery of about 30-kw. capacity to its uptown receiving station.—S. E. Bronson, Secretary and Manager.

Lewiston, Mont.—Sam W. Gebro, owner of the Spring Creek coal mines, will soon establish a gas and electric light plant; his representative, O. W. Belden, has appeared before the City Council, and after stating the extent of the preliminary work done, said it was desired before incurring further expense to ascertain the attitude of the Council with regard to submitting a gas and electric light franchise to the people at a special election; Council has voted in favor of the proposition.

Clifton Park, N. J.—The Dwass Electric Company, of Schenectady, has petitioned the Public Service Commission for permission to construct and operate an electric lighting system in Clifton Park.—H. J. Werner, Mechanicsville, President.

Newark, N. J.—The Public Service Railway will purchase very soon miscellaneous apparatus for its various sub-stations, consisting of rotary converters, transformers and switchboard apparatus, and also one 2,000-kw. turbo-generator for its Camden station.

Newark, N. J.—The North Broad Street Improvement Association has selected a 9,000-candle-power arc light at a cost of \$300 per year, for illuminating purposes; lamps are to be placed on Broad street between Market and Central avenue.

Princeton, N. J.—Borough is considering the establishment of a municipal lighting plant; the University Company has offered

to deed its extensive system of conduits.

Portales, N. M.—Plans have been completed by Engineers Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for an electric light plant and water works system; cost, \$50,000.—H. B. Ryther, City Clerk.

Albany, N. Y.—Franklin B. Ware, State Architect has recommended the removal of the present power house on Hawk street, and the erection of a new building with equipment that will double the capacity of the present building for supplying heat and power for the capitol, the new state education building and other state buildings.

Glens Falls, N. Y.—The Glens Falls Gas and Electric Company is considering plans for improvements to its plant, which will include the installation of a new switchboard in the local station and the erection of a duplicate high-tension transmission line; cost, \$20,000.—C. E. Wakeman, Glens Falls, General Manager.

Lewiston, N. Y.—Village Trustees are considering the construction of an electric light plant.

Hickory, N. C.—The Waterpower Electric Company, Col. M. E. Thornton, President, has perfected arrangements to take over the water power at Horseford Shoals, thus giving the company control of sufficient available power to furnish all possible needs.—Col. M. E. Thornton, President.

Wake Forest, N. C.—Citizens will vote April 12 on \$15,000 bonds to construct electric light plant.—Sol. J. Allen, Mayor.

Wahpeton, N. D.—Council is considering the installation of electrical machinery at the pumping station.

Cleveland, O.—F. C. Kingsbury, of Columbus, O., has been given a franchise to construct and operate an electric light and power plant in this city and also a contract for the street lighting.

Niles, O.—Council is considering a \$1,000 appropriation to carry on the work of house wiring and purchase of electrical equipment for the same.

Sandusky, O.—The Sandusky, Norwalk & Mansfield Railway Company is preparing to propel its cars by its own power; new management has decided to erect a power house.

Springfield, O.—The Springfield Light, Heat & Power Company has decided to erect a large addition to its plant in West Jefferson street.

Toledo, O.—The Rail Light Company has submitted a proposition to the Council Committee on Finance for supplying power for the projected high pressure mains with the pumping plant in its Water street power house; three propositions were submitted: one would give two 5,000-gallon pumps, at \$42,000, with an annual maintenance cost of \$15,500; the second, two 4,000-gallon pumps, with a maintenance cost of \$12,000; the third, three 3,000-gallon pumps, with a maintenance cost of \$14,000, each proposition not inclusive of the cost of electric current.

Lawton, Okla.—A. Elmo Hammonds, Mercantile Securities Company, is considering the installation of an electric light plant.

Minco, Okla.—City will install electric light system in connection with water works; cost, \$20,000 to \$25,000 for both; Burns & McDonnell, Kansas City, Mo., Engineers; W. E. Shown, City Clerk.

Ryan, Okla.—The Ryan Commercial Club will soon receive bids for the installation of an electric light system.—J. H. May, Secretary.

Sentinel, Okla.—City has granted Jennings, Barrett & Co. franchise to build ice and electric plant; machinery not yet purchased.—Frederick R. Jennings, Engineer in Charge.

Allentown, Pa.—Lehigh County Commissioners will erect an electric light plant at the poor house.

Harrisburg, Pa.—Select Council is considering an ordinance authorizing the city to contract for terms of one, two, three or five years for the lighting of the streets and for furnishing electricity for the police and fire alarm systems.

Johnstown, Pa.—The Johnstown & Galitzen Railway Company, of Johnstown, Pa., is receiving bids for steam power plant equipment; two sub-stations will be built; cost, \$97,500.—George Helman, Supples Bldg., Johnstown, Pa., Engineer and General Manager.

Myerstown, Pa.—A representative of Philadelphia capitalists who contemplate erecting a gas plant at this place, is looking over several sites; \$40,000 to \$50,000 will be expended on a plant, and if the project promises well, several of the smaller towns in the locality will also be given the service.

Schuylkill Haven, Pa.—Electors have voted to increase the debt \$11,000 to improve the municipal light plant.

Spartanburg, S. C.—The Electric Manufacturing and Power Company will improve its gas plant.

Mount Pleasant, Tenn.—J. G. Jackson and F. DeMarco, Mt. Pleasant, have been

selected as engineers for electric light plant.

Beaumont, Tex.—The Beaumont Gas Company will erect gas plant; capacity, 600,000 feet daily; cost, \$100,000; plans are being prepared.

Dallas, Tex.—The Colonial Hill Improvement League is urging the installation of 11 new arc lights.

Mart, Tex.—Bids will be received for return tubular boilers, pumps, boiler feed pumps, etc.—R. W. Bass, Mayor.

Tyler, Tex.—Council has granted Floyd E. Andrews, of New Baltimore, Mich., a franchise for a gas plant.

Woodlake, Tex.—Denison & Sherman Railway Company will build sub-station at Woodlake with sufficient capacity to operate street railway systems of Denison and Sherman and Dallas & Sherman Interurban Railway.—J. F. Strickland, Dallas, Tex., President.

Ogden, Utah.—Bids will be received about May 1 for the purchase of \$150,000 bonds for the construction of a power plant.—L. B. Spencer, Box 119, Engineer.

Harrisonburg, Va.—City is considering installation of dynamo in electric light plant; cost, \$10,000.—John F. Noll, Superintendent.

Tacoma, Wash.—The Fire and Water Committee of the Council has ordered arc lights placed at the following street intersections: North Forty-second and Baltimore, South Eleventh and Anderson, South Eleventh and Alder, South Twelfth and Washington, South Twelfth and Oakes, South Bay and Pine, and South Sixteenth and Proctor.

Walla Walla, Wash.—The Walla Walla Valley Traction Company will install four 1,000-h.p. water wheels, two 500-kw. units, either steam or gas, for auxiliary plants, and one 500-kw. unit for a hydro-electric plant.—F. S. Drake, Manager.

Yacolt, Wash.—City has granted J. Coulter a franchise for an electric light and power plant.

Wheeling, W. Va.—The Virginia Oil and Gas Company has applied for franchise to distribute natural gas in city limits.—A. M. Schenk, President.

Beloit, Wis.—The Beloit Water, Gas and Electric Company is planning to make additions to its gas mains this coming summer.

Rice Lake, Wis.—The Red Cedar Valley Electric Company has purchased the dam site and franchise on the Red Cedar River; concrete dam and power house will be built this spring and four more turbines installed.

Cornwall, Ont., Can.—The Long Sault Development Company has applied to the Dominion Government for permission to develop power on the St. Lawrence River at this city by the construction of a dam.

Kamloops, B. C., Can.—City will expend about \$10,000 in improvements to the municipal electric lighting and pumping plant.—H. K. Dutcher, Consulting Engineer, Flack Building, Vancouver.

London, Ont., Can.—E. I. Sifton, City Electrical Engineer, has recommended that the city build and equip a power plant of its own, rather than purchase the plant of the present lighting company.

Ottawa, Ont., Can.—Cecil B. Smith, Civil Engineer, Confederation Life Bldg., Toronto, Ont., is promoting a project, which will cost \$1,000,000, for developing power for mining properties in the Cobalt District.

Vernon, B. C., Can.—Surveys have been completed by J. C. Kennedy, of the Stave Lake Power Company, Vancouver, B. C., for development of water power to generate electricity to operate an electric street railway system here and for lamps and motors to nearby towns.

Parra, Mex.—C. F. Greenwood, of Montreal, representing capitalists of that place, is investigating the possibilities of establishing a power plant on the Conchas River for the generation of 15,000 horsepower to supply the mines of a large area; plant will cost \$500,000; the Mexican Northern Company is backing it.

BIDS RECEIVED AND CONTRACTS AWARDED

Agnew, Cal.—The Agnew's State Hospital Board has awarded contracts as follows: Engine, Engineering & Maintenance Company, \$6,750; boilers, Risdon Iron Works, \$26,400; sewers, F. B. Downing, \$5,154.37, and generators, Barrett, Folk & Downing, \$5,150.

Atlanta, Ga.—The Piedmont Electric Company, Asheville, N. C., is low bidder at \$12,750 for conduit and wiring system in Post Office.

Bellevue, Ia.—Contracts have been awarded for the installation of gas producer engine, pump and dynamo to take the place of the present electric light system. This insures day and night service

and also electric motive power at a very low cost. It is estimated that the installation of the new system will mean a saving of at least \$100 per month in the consumption of fuel.

Des Moines, Ia.—Contract for an electric light and power plant for County Court House and jail has been awarded to the Erie City Iron Works, of Erie, Pa., for \$10,750.—Architects, Proudfoot & Bird, 625 Flynn Building; Harry B. Frase, County Auditor.

Lexington, Ky.—The Light and Water Committee has recommended that the Council enter into a contract with the Lexington Railway Company for 519 street lamps for a period of one year at \$74 per lamp, or \$450 cheaper than the old contract. The company agrees to furnish commercial lights for residents at 13 cents per 1,000, with 20 per cent. discount on all bills over \$1 paid within ten days after first of month.

Houma, La.—William Watkins, who was awarded contract for building the extension to the Houma power house for the installation of the electric plant, withdrew his bid, and the contract was given to A. A. Bonvillain for \$3,619. Mr. Bonvillain will commence work immediately.

Brookline, Mass.—W. H. Lott, representing the Edison Electric Illuminating Company, of Boston, appeared before the Town Board and quoted prices for street lighting based on the present lighting hours, as follows: 60-candle-power tungsten \$23.48 per year, or 10-year contract, \$21.13; arc lights \$93.42 per year, or 10-year contract, \$84.08.

Tower Mills, L. I., N. Y.—Muralt & Co., of New York City, have been awarded the contract for remodeling and enlarging the water-power plant on the Peconic River at this point. New turbines of the vertical shaft type will replace the old water wheels now in use and an additional unit of the same general design will be installed.

Xenia, O.—The contract with the Citizens' Light & Power Company to light the city of Xenia for a period of ten years was signed, March 5, at a meeting of the Board of Public Service, and the company's \$10,000 bond accepted.

Johnstown, Pa.—The Dale Light, Heat & Power Company, city, has awarded the contract for furnishing a generator for the power house to the Northern Electric Company, of Madison, Wis., at \$4,100. The contract for the remainder of the equipment for this plant was placed some time ago. The plant will be completed early next fall.

Spartanburg, S. C.—A contract has been awarded to the Electric Power & Manufacturing Company for furnishing lights at a rate of \$55 per lamp per year for the first two hundred lamps, on the basis of a ten-year contract, and that the schedule of rates for light, heat and power to private consumers as submitted shall be made a part of such contract. The schedule for private consumers was 12 cents per kilowatt with discounts varying from 10 per cent. on bills of \$2 and less to 60 per cent. for bills of \$52 per month.

Seattle, Wash.—The following contracts were let on March 2 by the Board of Public Works for constructing a cluster light system at Second avenue, etc.: Subdivision No. 1, conduits, etc., Charles F. McDonald, \$20,096; Subdivision No. 2, generators, Meacham & Babcock, \$8,641; Subdivision No. 3, iron poles, Olympic Foundry Company, Eighth, South and Plummer streets, \$3,955.

FIRE EQUIPMENT

Chico, Cal.—An agreement has been received from the Chico Water Company whereby the city is allowed to erect a hose house on the company's land on Olive street as an auxiliary to the new fire company which is to be organized.

Pasadena, Cal.—Council is considering an ordinance authorizing the City Clerk to advertise bids for the construction of a fire engine house on Pasadena avenue and Hurlburt.

San Diego, Cal.—City will soon ask bids for a motor-driven hose and chemical wagon.—Chief Donnelly.

Yuba, Cal.—City is considering the installation of a fire alarm system.

Tallahassee, Fla.—The Board of Commissioners of State Institutions has directed the Secretary to correspond with dealers in fire extinguishers relative to purchasing six extinguishers for use at the Governor's mansion.

Millen, Ga.—Citizens are organizing a volunteer fire department.

Decatur, Ill.—Plans are being prepared for a fire house to be erected in the northeast part of the city.

Joliet, Ill.—The City Clerk has been authorized to advertise for bids for a combination hose cart and chemical wagon and an aerial truck and ladder wagon for the Fire Department.

Evansville, Ind.—Plans for the erection of

a new fire station in the Bedford avenue district of Evansville are being considered by the Board of Public Safety; No. 6 single hose house may be abandoned and a double station on outer Washington avenue erected.

Vincennes, Ind.—The Board of Public Works is considering plans for two new fire houses.

Des Moines, Ia.—City has passed a resolution to expend \$6,800 for an aerial truck.

Webster, Ia.—New apparatus will be purchased; also a relief valve for hydrants and a basement nozzle.—Chief J. J. Kolbeck.

Kansas City, Kan.—Bids will be received for furnishing a fire engine.—Geo. Foerschler, City Clerk.

Topeka, Kan.—E. R. Townsend, of Chicago, expert hydraulic and electrical engineer, has recommended the establishment of an additional fire department station with chemical engine, the installation of at least 35 additional fire alarm boxes, the providing of a first and second-class engine, an aerial hook and ladder truck and small apparatus such as deck pipe, ladder nozzle, hose jackets, etc.

Lexington, Ky.—The Police and Fire Committee has recommended that funds be appropriated to buy three new Gamewell indicators to be installed at three of the sub-stations.

New Orleans, La.—A volunteer fire company has been formed at Stock Landing by Jacob Reichert and others; a steamer, hose cart and hose will be purchased.

Winslow, Me.—Town is considering installation of a fire alarm system.—Chief Ellen.

Baltimore, Md.—The Architectural Commission has adopted plans by Charles M. Anderson, 324 North Charles street, Baltimore, for No. 14 truckhouse to be erected on Gorsuch avenue; cost, about \$24,000.

Easthampton, Mass.—Town has appropriated \$5,200 for the Fire Department and \$500 for new hose.

Fall River, Mass.—A new company will be organized and equipped in the Maplewood section.

Holyoke, Mass.—The Fire Commissioners are urging the removal of the engine house on High street to some other location.

Peabody, Mass.—Chief Barrett has asked for \$1,000 for new hose and again for a chemical engine.

Waltham, Mass.—Citizens are urging purchase of a modern hook and ladder truck; cost, \$2,500.—Chief Johnson.

West Springfield, Mass.—Town has asked for an auto.—Chief Jones.

Wilkinson, Mass.—Town is considering purchase of a chemical fire engine.

St. Paul, Minn.—Architects Buechner & Orth are preparing plans for a \$15,000 fire station.—Wm. O'Gorman, Secretary Board of Fire Commissioners.

Jackson, Miss.—The Fire Commissioners are considering the purchase of automobile fire apparatus.

St. Louis, Mo.—City has secured a site on West Newstead avenue for an engine house.

Butte, Mont.—Residents of McQueen addition are urging better fire protection; about 700 feet of hose is needed.

South Missoula, Mont.—Town has organized the Missoula Volunteer Fire Company No. 2.—Thomas Hoopes, First Assistant Chief.

Atlantic City, N. J.—A new fire station will be erected and equipped on the West Side; an automobile will be purchased for Chief Black.

Beverly, N. J.—Residents are urging that Council compel the Farrum Preparatory School to erect fire escapes.

Hackensack, N. J.—Funds are being secured for an auto chemical engine for Engine Company No. 5.

Hoboken, N. J.—Taxpayers are urging the installation of a new fire company near the center of the city; the Board of Fire Commissioners are considering the purchase of a new motor fire engine; cost, \$8,000.

Junction, N. J.—Borough has purchased a lot upon which to erect fire department quarters, Council room and a Town Hall.

Elmira, N. Y.—Fire Chief Espey has recommended the erection of a fire station in the western part of the city and the purchase of a third size engine.

Lockport, N. Y.—Firemen are urging the purchase of a new truck for the Protection Hook and Ladder house; cost, \$3,500.

Oneida, N. Y.—City needs two new engine houses and equipment; cost, \$30,000.

Poughkeepsie, N. Y.—Architect Percival M. Lloyd is preparing plans for a \$15,000 Fire Department building.

Richfield Springs, N. Y.—Chief Purcell has recommended purchase of a steamer.

Youngstown, O.—Council has passed under suspended rules an ordinance authorizing the issuing of \$10,000 bonds for automobile fire engine and equipping the Market Street Fire Department.

Beaver Falls, Pa.—Council has passed an ordinance for installation of a fire alarm system.

Bradford, Pa.—Council has passed an ordinance for the issuing of \$30,000 bonds; \$4,500 of this will be used for the purchase repair and improvement of fire apparatus and \$18,000 for purchase of land and erection of buildings for the Fire Department.

Harrisburg, Pa.—Bids for the completion of the Allison hook and ladder truck house will be readvertised for under new specifications prepared by the company's Building Committee.

Jenkintown, Pa.—Pioneer Fire Company No. 1 will purchase an automobile combination chemical wagon; cost, \$5,500.

Phoenixville, Pa.—Architects J. V. Foley and C. E. Rogersford are preparing plans for a two-story engine house for the West End Fire Engine Company No. 3.—C. L. Epright, Chairman Building Committee.

Pittston, Pa.—The Joint Estimate Committee is considering recommendation of Chief Hart for the purchase of a hook and ladder and a plentiful supply of hose.

Wilkes-Barre, Pa.—Select Council has passed first reading ordinance providing for the purchase of a plot of ground on Scott street for the erection of a new fire station; Fire Committee has recommended that specifications drawn for new fire apparatus be changed so that parties may bid on gasoline fire engines.

Union, S. C.—City will erect fire station; preliminary plans have been prepared for brick fireproof structure, two stories high, to contain Fire Department, police barracks, municipal offices and opera house; cost, about \$15,000.

Hoven, S. D.—Citizens have organized a volunteer fire company with C. F. O'Brien as Chief.

Abilene, Tex.—Uniforms will be procured for the Fire Department; \$600 will be expended.—G. L. Paxton, President.

Hillsboro, Tex.—Citizens will vote April 6 on \$16,000 bonds for erection of fire station and City Hall.

Salt Lake City, Utah.—A new fire station will be erected at Second West and Eighth South streets; station will be equipped with necessary apparatus.

Roanoke, Va.—City is considering purchase of a modern aerial truck, installation of three more fire houses and other equipment.—Chief McFall.

Tacoma, Wash.—The Fire and Water Committee is considering a proposition to buy an automobile chemical engine for the Fire Department.—Fire Chief McAlevy.

Tacoma, Wash.—Council is considering an ordinance authorizing the Commissioners of Public Works to have prepared plans and specifications for a fire boat; also plans for a brick fire house on South Forty-third street.

Benwood, W. Va.—City is considering the erection of a fire station on Marshall street.

BIDS RECEIVED AND CONTRACTS AWARDED

Tucson, Ariz.—D. A. Evans has been awarded contract by Council for the new fire station which will be built on Sixth avenue for \$7,240; work will be commenced at once and it is expected that the building will be ready for occupancy by June 1.

Fort Smith, Ark.—City has awarded contract to the LaFrance Manufacturing Company, of Elmira, N. Y., for a large size steam fire engine, and a combination chemical and hose wagon, with 40-gallon tank and 1,000 feet of hose; and contracts with the following companies each for 1,000 feet of hose: The Manhattan Company, of New York, the Eureka Fire Hose Company of New Jersey, and the Chicago Fire Hose Company. The total cost of fire apparatus is \$6,400; delivered.

Los Gatos, Cal.—Bids were opened for 300 feet of 2-inch fire hose, and after representatives from the Western Belting & Hose Company, the Bowers Rubber Company, the Gutta Percha Rubber & Manufacturing Company and the Revere Company had addressed the Board of Trustees at length as to the merits of their respective products, the contract was awarded to the Western Belting & Hose Company of San Francisco to supply the hose, guaranteed for three years, at a price of \$240.

Paterson, N. J.—The Lakeview Volunteer Company has decided to purchase a hose wagon from Elite Company No. 2, of Passaic.

Troy, N. Y.—Bids were received for furnishing five thousand feet of fire hose for use of the Fire Department from the New York Belting & Supply Company, McCormick & Dunn, J. M. Warren & Company, C. D. Stewart, T. C. Iler, Barnum Brothers, James H. Dolan and the Eastern Ceiling & Hardware Company; several of the bidders presented four different propositions, and the matter was referred to the Com-

missioner of Public Safety and City Engineer.

Youngstown, O.—Council has provided for the purchase of an automobile fire engine by passing an ordinance providing for a bond issue of \$10,000, part of which will be used in equipping the new Market street Fire Department. Directors of Public Safety will now let a contract to the Webb Motor Company, low bidder on the engine and the contract will probably be approved by Council.

Georgetown, Wash.—Council has awarded the contract for constructing the new City Hall and fire station to H. S. Martin, a Seattle contractor; his bid was \$13,900; the buildings will be of concrete and brick.

ELECTRIC RAILWAYS

Phoenix, Ariz.—G. M. Halm, F. J. Bennett, B. A. Fowler, J. W. Dorris and C. A. King are promoting the construction of an electric railway within the city limits; company will be known as the Suburban Railroad Company.

Los Angeles, Cal.—City has granted H. F. Vollmer a franchise for a double-track electric road on certain streets.

San Francisco, Cal.—The Supervisors' Public Utilities Committee is considering a plan to build another street railway line to Market street over Stockton by tunneling the hill between Sutter and Sacramento streets.

San Francisco, Cal.—The California Electric Railways Company has been incorporated to construct a crosstown street railway 2½ miles long; capital, \$10,000,000.—Lewis F. Byington, Frederick V. Scott, John R. Tyrrell, John F. Forbes and W. H. Orrick, incorporators.

Santa Rosa, Cal.—Council has granted a franchise to the Santa Rosa & Clear Lake Railroad for the part of its system which will be built within the city limits; gasoline motor cars will be operated.

Wilmington, Del.—The Westchester & Wilmington Electric Railway Company is negotiating financing the construction of its proposed electric railway between West Chester and Wilmington.

Washington, D. C.—The Mexican Government has granted a concession to Jose Castellet, a member of the National Senate, on behalf of the Mexican and American Holding and Improvement Company, of Salt Lake City, Utah, for the construction and operation of a railroad between the Pacific ports of Acapulco and Salina Cruz. This road will be about 250 miles long and will connect with the National Tehuantepec line at Salina Cruz, and will be called the Oaxaca and Ayutla Railroad. It is reported that the British Columbia Electric Railway Company is planning to obtain the two water powers of the Fraser Valley, Lake Stave Falls, near Ruskin, and the Vedder Falls, near Chilliwack, and to build a belt line railway, of which the Chilliwack line will be a part; R. H. Sperling, Vancouver, is General Manager.—Address No. 3140, Bureau of Manufacturers.

Elberton, Ga.—Guy G. Rucker, Ruckersville, is considering the construction of an electric railway from Iva, S. C., via Ruckersville to Elberton, Ga.

Meadows, Ida.—John Bohrer, Weiser, is promoting the construction of an electric line from the Pacific & Idaho Northern terminus to Roseberry.

Springfield, Ill.—The Secretary of State has licensed the Illinois Inland Electric Railway Company; line will be interurban and constructed from Springfield in southeasterly direction through Sangamon and Christian counties to Pana; capital stock, \$50,000. Incorporators and first Board of Directors are Geo. W. Davidson, Carl O. Beroth, T. C. Kennedy, A. E. Wolf and Wm. Baker, all of Chicago, Ill.

Wheaton, Ill.—A company, known as the Du Page Railroad Company, will build an electric railway from Wheaton to Naperville and Plainfield; capital stock, \$25,000.—Asa M. Royce, President; W. F. Keeney, Secretary and Treasurer, of Naperville, Ill.

Indianapolis, Ind.—The Capital Circuit Traction Company will build an electric railway connecting Greenfield, Fortville, Noblesville, Sheridan, Lebanon, Advance, Jamestown, North Salem, Danville, Clayton, Hall, Mertonsville, Trafalgar, Franklin, Marietta, Shelbyville and Fountainstown; contracts for the construction of the railway have not been awarded.—J. N. Crabb, Law Bldg., Indianapolis, President; C. E. Worth, Secretary and Treasurer; J. A. Shafer, 3710 N. Illinois street, Indianapolis, Chief Engineer.

Knox, Ind.—Attorney Peters has asked the Board of County Commissioners for a franchise for an electric line to connect Lapporte, Knox and Logansport.

Burlington, Ia.—The Burlington-Bonaparte Interurban Railway Company is considering plans for the financing of railway which will connect Burlington, Augusta,

Denmark and Fort Madison.—J. A. Johnson, Bonaparte, President; J. Bland, Burlington, Vice-president; E. E. Egan, Burlington, Secretary and Treasurer.

Davenport, Ia.—The Tri-City Railway will let contracts soon for material for the construction of about 8 miles of new track.—J. F. Porter, President.

Des Moines, Ia.—Council has received an application from C. R. Keyes for a 25-year franchise for an elevated railway track through the city for the Des Moines Elevated & Interurban Railroad Company.

Sioux City, Ia.—Land owners in central Woodbury County have taken steps to build an electric railroad from Sioux City through Climbing Hill and Anthon to Ida Grove; line will be known as the Sioux City, Climbing Hill & Ida Grove Electric Railway Company.—C. S. Malcomb, Climbing Hill, President; Payne Sargison, Luton, Treasurer, and W. H. Steinhauer, Climbing Hill, Secretary.

Junction City, Kan.—The Electric Railway, Light and Ice Company will place contracts very soon for about two miles of catenary construction with 000 groove trolley.

Louisville, Ky.—The Kentucky Central Traction Railway Company, of Louisville, has not yet let contracts for the construction of a 40-mile electric road, which is to connect West Point, Elizabethtown, Howard, Vine Grove and Hodgenville; capital, \$500,000.—G. J. Lampton, President and General Manager.

Springfield, Mass.—The Springfield Street Railway Company is desirous of a portion of the old green or parkway, in the center of Main street, between Carew and Greenwood streets, and in the near future the company will petition the Board of Aldermen asking for a location for a track through the center of the green between Carew and Bond streets, with sundry switches or turnouts that may be necessary to serve its purpose.

St. Paul, Minn.—The street car line which now runs to Inver Grove, will be extended two miles from Inver Grove to St. Paul Park.

Cape Girardeau, Mo.—The Cape Girardeau-Jackson Interurban Railway will soon let contracts for material for the reconstruction of a considerable amount of track; number of new turnouts will also be built.—Samuel Barnes, General Manager.

Hannibal, Mo.—The Farmers' Electric Railroad Association has been formed to construct an electric railway from Kirksville to Hannibal via La Plata.—Henry Funk, Cherry Box, Mo.

Jersey City, N. J.—The Twelfth Ward Improvement Association is urging the extension of the Fourteenth street, Union Hill, trolley line so as to make a belt line, linking the four municipalities.

New York, N. Y.—Plans for an extension of the rapid transit system of this city, to cost about \$50,000,000, are being prepared by engineers of the Interborough rapid transit company; the plans will be submitted to the Public Service Commission very soon.

Hicksville, O.—The Fort Wayne & Toledo Traction Company has been incorporated to build an electric railway from Bryan to Fort Wayne and from Bryan to Montpelier; capital, \$100,000; R. L. Bastress, C. A. Bastress, W. Behne, R. L. Starr and W. S. Tomlinson, incorporators.

Toledo, O.—Efforts are being made to secure an agreement between the owners of the Toledo, Bowling Green & Southern Traction Company and the Columbus-Marion Company, to construct a link to connect the two properties; this would provide for a through traction service between Toledo and Columbus. The Toledo, Bowling Green & Southern runs from Toledo to Findlay, and the Columbus-Marion line from Marion to Columbus.—Jno. G. Webb, owner of the Columbus-Marion road, is active in the movement.

Enid, Okla.—The Enid City Railway will build an extension on South Grand avenue.—C. Kline, General Manager.

Lawton, Okla.—James M. Sims and C. L. Carson, St. Louis, Mo., and W. D. Todd, Warren, Pa., are considering plans for the building of an electric railway to connect Lawton and its additions with Fort Sill; franchise will be asked for at once.

Collingdale, Pa.—The Borough Council has passed an ordinance, after which it was signed by the Burgess, giving the Philadelphia & Carretford Street Railway Company the right to connect its tracks of the Darby, Media & Chester Street Railway Company, thereby enabling these companies to operate a through high-speed joint service over their respective tracks between Chester and Sixty-ninth Street Terminal of the Market street elevated.

Duquesne, Pa.—The Duquesne & Dravosburg Street Railway will apply to the State for a charter to construct a street railway in the borough of Duquesne and Mifflin township; road will also be built

to Dravosburg and West Elizabeth.—A. J. Krill, John C. Kato, T. F. Vankirk and Charles McGlinley, Directors.

Morris, Pa.—The Morrisdale Railway has been chartered to build an electric railway in Clearfield County; length, four miles; capital stock, \$40,000.—Charles Steele, Northumberland, President.

Reading, Pa.—The Inter-County Electric Company will apply to the State for a charter; company proposes to construct an electric railway from Reading to Allentown, via Lyons and Tipton; distance, 35 miles; capital stock, \$500,000.—Maxwell H. Bochow, George F. Souwers, Bateman Sadlington, Josiah H. Fisher and Frederick R. Perry, Directors.

Waynesburg, Pa.—The Waynesburg & Monongahela Street Railway Company has secured a 99-year franchise in this city. Mt. Morris, Carmichaels, Rice's Landing and Marianna, with survey plans and profiles between Waynesburg and Millsboro, a distance of 14 miles, and Waynesburg and Washington, Pa., 22.4 miles; officers of the company are: Peter Langsdorf, McKeesport, Pa., President; Chief Engineer, W. J. Coursin, House Bldg., Pittsburg, and W. E. Reed, Consulting Electrical Engineer.

Whitewood, S. D.—The Dakota Western Railway Company has been incorporated to build a 30-mile road from Whitewood to Attainment.—H. E. Cooper, P. W. Benniwell and T. W. Thompson, Whitewood, Incorporators.

Chattanooga, Tenn.—An electric line will be built during the year from Chattanooga to Cleveland, Tenn.; distance, 28 miles; right-of-way for the proposed line is now being secured.

Knoxville, Tenn.—The Knox County Road Commission has granted permission to the Knoxville Railway and Light Company to place a double track across the Tazewell pike at Greenway, on the Fountain City division of the company's road; the Knoxville Railway and Light Company will at once begin the double track of the Fountain City line so as to take care of the summer travel.

Austin, Tex.—The Rockport & Aransas Pass Railroad has been chartered to construct an electric railway from Rockport to the jetties at Aransas Pass; distance, 11.5 miles; capital stock, \$11,500.—C. G. Johnson, Harry Taylor, D. R. Schivener and W. H. Baldwin, Incorporators.

Austin, Tex.—The Texas Interurban Company has completed surveys and prepared maps, profiles and estimates for its proposed electric railway from Austin to Lockport; distance 30 miles.

Big Spring Tex.—Preliminary organization of a corporation has been formed, composed of prominent citizens of Big Springs and several resident capitalists, for the purpose of building a railroad north from Big Springs through the new town of Soash in Howard County and through either Lamesa or Tahoka; intention of the company is to incorporate with a capital stock of \$300,000, and to construct and put into operation at least 50 miles the first year.

Palestine, Tex.—Contracts will be let in May for building the line of the Palestine & Dallas Interurban Railroad Company; distance, 110 miles; a small bridge will be erected over the Trinity River.—J. V. Watkins, President; G. A. Duren, Engineer, Corsicana.

Port Arthur, Tex.—The petition and draft of the ordinance containing the grants asked for by H. J. Myers and S. A. Price, who propose to construct a street railway system in this city, has been filed with the City Secretary.

Plain City, Utah.—Citizens of Farr West, Harrisville, Poplar City, Warren and Shilstown have petitioned the County Commissioners to grant a railway franchise to a Committee composed of Lyman Skeen, J. A. Taylor and J. M. Field, with the understanding that it be turned over to the Ogden Rapid Transit when terms of agreement were complied with.

Christiansburg, Va.—The Montgomery Traction Company will build an electric railway from Christiansburg to Cambria; capital stock, authorized, \$25,000.—C. A. Johnston, Christiansburg, President; E. S. Hagan, Vice-president and General Manager; C. X. Wade, Secretary and Treasurer.

Burlington, Vt.—The Burlington Traction Company will continue its line on Wenooski avenue to Main street.

Rutland, Vt.—The local Railway, Light and Power Company is considering a plan for extending its electric railway from Castleton to Poultney; distance, 6 miles.

Bellingham, Wash.—The Whatcom County Railway and Light Company will soon begin the building of its North street line extension from Dock street to St. Clair street; distance, about 1½ miles.

Chehalis, Wash.—The Twin City Light and Power Company has had introduced in Council an ordinance whereby it is proposed

to change its entrance into the city; original ordinance proposed that the company would come into town by way of North First street; recently Engineers have made surveys on both the east and west side of the Northern Pacific main line, with the result that the company has concluded to take the east side route.

Everett, Wash.—The Everett & Tacoma Railway Company has been incorporated to build an electric railway between Everett and Tacoma; surveys for the route have already been made; capital stock, \$2,500,000.—G. M. Cochran, E. Colburn, E. L. Colburn, Edgar Wright and O. E. Crossman, Snohomish, Incorporators.

Seattle, Wash.—The Seattle Electric Company has asked Council for a franchise on Greenwood avenue and Tenth avenue West.

Tacoma, Wash.—Cutting down the distance from Tacoma and Seattle about eight miles less than the Interurban and 12 miles shorter than the Milwaukee line, a survey for the new line is reported being made along the shore of the east side of Commencement Bay towards Browns Point; surveyors have reached a point back of Caledonia Beach on this end of the line and from their stakes it is evident that whatever company is back of the project intends to tunnel Browns Point, thus reducing the distance about four miles.

Tacoma, Wash.—The Pacific Traction Company will extend its line to the little city of Steilacoom.

Walla Walla, Wash.—The old Columbia & Walla Walla Valley Traction Company has been taken over by a company of local and Eastern capitalists, according to an announcement made by G. W. Mathias, a traction line promoter of Spokane; company intends to construct a system of electric lines radiating from this city and connected with steamers on the Columbia River; capital is to come principally from the East.

West Alexander, W. Va.—The Wheeling & Elm Grove Railway Company is planning to extend its electric railway from the present terminus at West Alexander to Claysville.—J. W. Smith, Wheeling, Chief Engineer.

Milwaukee, Wis.—Wisconsin will soon be netted with interurban trolley lines, at least in the southeastern portion; the Milwaukee Northern, which now has a line to Sheboygan, has secured half of the right-of-way for a line to Fond du Lac, 60 miles north of the city; line will connect with the present Fox River valley lines, which extend from Fond du Lac to Oshkosh, Neenah, Menasha, Appleton, Kaukauna, Depere and Green Bay, a total length of about 65 miles.

Morrisburg, Ont., Can.—Plans are being considered by the Morrisburg Electric Railway Company for beginning construction on its projected line this spring; road will extend from Morrisburg to Ottawa, through Williamsburg, Winchester, Chesterville, Morewood, Orwan, Kenmore and Metcalf; capital stock, authorized, \$1,000,000.—C. M. Willard, President and General Manager; Bradford Louchbridge, Secretary; J. H. Louchbridge, Treasurer, all of Morewood; Robert Merkley, Williamsburg, Plant Superintendent; G. Brown, Morrisburg, Chief Engineer.

Montreal, Que., Can.—The Montreal Street Railway Company has applied to Parliament under the name of the Montreal Terminal Company, for permission to build and operate an electric elevated railway in this city.—D. McDonald, Montreal, Manager.

BIDS RECEIVED AND CONTRACTS AWARDED

Calgary, Alta., Can.—The following contracts have been awarded by the city in connection with the municipal electric railway to be built this year: Motor generator and switchboard, Allis-Chalmers-Bullock Company, Toronto; 750-horsepower engine, Robb Engineering Company, Amherst, N. S., \$14,300; 1,100 tons of steel rails, Gorman, Clancey & Grindley, agents, Calgary, Alta. The East Kootenay Lumber Company will supply the ties at 56 cents each.

BRIDGES

Phoenix, Ariz.—J. M. McClure, of Tucson, has been selected Engineer for the proposed bridge to be constructed over Salt River at Center street.

Berkeley, Cal.—The Street Committee of the Town Trustees will erect a big culvert on Josephine street and bridges in various parts of North Berkeley.

Sacramento, Cal.—Surveyor Phinney has submitted plans for the Dry Creek bridge; cost, \$29,000.

Rocky Ford, Col.—Plans are being prepared by Mark Denson, County Surveyor,

for a bridge about 7 miles south of Rocky Ford; County has not yet decided on bridge over King Arrow east of La Junta.

Bridgeport, Conn.—Public Works Director Blitz is planning to begin work upon the construction of the reinforced concrete culvert to replace the present dilapidated wooden bridge across Pembroke Lake at Arctic street on April 15; Board of Apportionment has appropriated \$5,000 for the culvert which will be constructed by the employees of the Public Works Department; culvert across the Rooster River at Brooklawn avenue will be built after the Arctic street culvert is finished.

Manchester, Conn.—Town is considering the erection of two small concrete bridges on Adams and Hilliard streets; cost, about \$1,000.—Highway Commissioner Ulrich.

New Britain, Conn.—The Board of Public Works has asked for an appropriation of \$153,887 for the needs of the Department for next year, including \$5,675 for bridges.

Jacksonville, Fla.—Bids are being received for constructing a drawbridge over Pablo Creek in Duval County.

Peoria, Ill.—A bridge will be constructed over the Illinois River by the Peoria and Pekin Union Railway Company; cost, \$600,000.—Walter E. Emery, Chief Engineer, Peoria.

Indianapolis, Ind.—Plans for a new bridge across the canal at Thirtieth street have been adopted by the Board of Public Works; bids will be asked immediately; cost, \$12,000.

Mishawaka, Ind.—Citizens are urging the construction of a bridge at West street.—W. S. Moore, City Engineer.

Paducah, Ky.—The County Fiscal Court will construct a concrete bridge over Clark's River and Perkins Creek.—Bert Johnson, County Supervisor.

Lawrence, Mass.—A clause has been introduced in the Methuen Town warrant providing for the co-operation with the city in constructing uniform culvert where the boundary line divides Bloody Brook; City Engineer Marble has estimated cost at \$30,000.

Lynn, Mass.—Officials of Lynn and Saugus are considering the repair of the East Saugus street bridge.

Mcneon, Mass.—Town has voted a \$2,500 appropriation toward building a bridge in the town of Palmer.

Jackson, Mich.—A bridge will be constructed across Grand River at Ganson street.

Lansing, Mich.—The Committee on Bridges of the Third Ward Aldermen will soon award contract for the construction of a 150-foot bridge.—A. D. Wilkins, 804 Hillsdale street, West, Lansing, Promoter.

Duluth, Minn.—Citizens of the town of Kelsey have petitioned the County Board for the erection of a bridge over the Whitefish River.

Courtland, Miss.—Panola County will construct iron bridge over Long Creek; Board of Supervisors, Batesville, Miss., will receive bids in April.—R. W. Draper, Clerk of Board.

Hastings, Neb.—The Street and Alley Committee has been instructed to confer with the County Supervisors relative to repairing the Elm street bridge.

Omaha, Neb.—Plans drawn by the City Engineer for a foot viaduct over the Great Western tracks at Eighteenth street, south of Leavenworth, have been approved, but the building of the viaduct has not as yet been ordered.

Reno, Nev.—The County Commissioners are considering erection of a bridge over the Truckee River at Mill street.

Hooksett, N. H.—Town has voted to build a new steel bridge across the Merrimack; \$26,000 bonds will be issued.—G. M. Lawrence, Moderator.

Newark, N. J.—The Board of Freeholders is considering the construction of a bridge over the Passaic River; work to be done jointly by Essex and Hudson Counties.—T. J. Wasser, Engineer.

Albany, N. Y.—The New York State Interstate Bridge Commission has submitted its second annual report to the Legislature on its investigation with the New Jersey Commission of the question of interstate bridges across the Hudson River from New York to New Jersey; Commission has recommended bridges from Manhattan to Bergen County, N. J.; from Staten Island to Bayonne; from Staten Island to Elizabethport, and from Staten Island to Perth Amboy.

Charlotte, N. Y.—The Rochester & Manistow Beach Railroad Company will soon let contracts for the construction of a 1,800-foot concrete viaduct and a 600-foot wood-piled trestle over Braddock's Bay.—Wm. H. Gillette, General Manager.

Niagara Falls, N. Y.—The Legislature is considering a bill for the construction of a bridge across the lower river in the vicinity of De Veaux College.

Troy, N. Y.—Sixth Ward Taxpayers are urging the construction of a modern bridge

over the Wynantskill at the head of Mill street.

Elizabeth City, N. C.—The Camden Ferry company will construct an iron bridge across the Pasquotank River to supplant present ferry system; cost, \$10,000.—H. T. Greenleaf, Secretary-Treasurer.

Barberton, O.—City will construct viaduct; cost, about \$69,246.—H. W. Alcorn, City Engineer.

Columbus, O.—The Legislature is considering a bill to authorize the County Commissioners to build a bridge over the Sandusky River at Lane street.

Coshocton, O.—Common Pleas Court Judge W. E. Weygandt has granted temporary injunction against the County Commissioners, enjoining them from selling \$325,000 bonds for the construction of two new bridges over the Tuscarawas and Muskingum rivers.

Dayton, O.—County will sell \$18,000 bridge bonds on April 1.

Youngstown, O.—Engineers from the City Engineering Department have started the work of taking levels at Spring Common for the new viaduct; survey for the new bridge will be done at once and all other preliminary work will be hurried so that actual construction work can be started at once.

Pendleton, Ore.—City will erect a two-span bridge over the Umatilla River at Lee street.

Portland, Ore.—City Engineer Taylor will draw plans and specifications for a new bridge at Madison street.

Allentown, Pa.—For bridges, public buildings, etc., the Lehigh County Commissioners will ask a \$200,000 loan and raise the tax rate seven-tenths of a mill to 2½ mills.

Butler, Pa.—Butler County Commissioners have decided to erect a new steel bridge across the Connoquessing River in the north end of this place; bids will be asked as soon as the plans are prepared; no Engineer has been selected.

York, Pa.—Council is considering the construction of reinforced concrete bridges over the poor house run at Prospect street and Boundary avenue.

Pawtucket, R. I.—City is considering plans for the construction of a bridge over Blackstone River.—Geo. A. Carpenter, City Engineer.

Columbia, S. C.—E. E. McTeer and H. P. McTeer, of Early Branch, and C. F. Harvey, of Pineland, have been appointed Commissioners for the erecting of a bridge and causeway over the Coosaw River in Hampton County.

Yorkville, S. C.—York County Commissioners will receive bids on March 17 for construction of two bridges.—Clem F. Gordon, Supervisor.

Knoxville, Tenn.—City Engineer Newton's office has about completed plans for the proposed Asylum avenue viaduct; length, 1,100 feet; bids will be advertised within 30 days; \$50,000 bonds will be sold March 16.

San Antonio, Tex.—Council is considering the erection of concrete bridge to replace present Commerce street bridge.

Norfolk, Va.—The Board of Aldermen has adopted ordinance appropriating \$9,000 for construction of concrete bridge over Mahone's canal at Lake avenue.

Richmond, Va.—Mayor Richardson has recommended that the James River Bridge Commissioners be requested to prepare and report a plan for building a new bridge between Richmond and Manchester.

Tacoma, Wash.—Citizens will vote April 6 on \$300,000 for building permanent bridges.

Fond du Lac, Wis.—The Board of Public Works has been instructed to prepare plans and receive bids for two steel girder bridges with 75-foot span and 20-foot roadway, over river at Forest avenue and Division street.

Fredericton, N. B., Can.—The Provincial Works Department is preparing plans for steel bridges at Chipman, Fredericton Junction and Buctouche.

BIDS RECEIVED AND CONTRACTS AWARDED

Magazine, Ark.—Tom Boles, Engineer of the Illinois Steel Bridge Company, of Fort Smith, has succeeded in landing two bridge contracts; one bridge is to span Sugar Creek and the other will cross Scott Creek at points near Magazine; work will be started at once.

Grand Junction, Col.—The Commissioners of Mesa County have awarded the contract for erecting a bridge over the Grand River at Vineland to M. J. Patterson Construction Company, of Denver, for \$30,000.

Vineland, Col.—The County Commissioners have awarded the contract for the construction of a bridge across the Grand River at Vineland to the M. J. Patterson Contracting Company, Denver, for \$30,000.

Bridgeport, Conn.—Bids were opened March 9 by the Congress Street Bridge Commission upon the contract for the construction of a temporary foot bridge across

the Pequonnock River at Congress street, for use during the building of the new rolling lift bridge, and action was deferred upon awarding the contract. The Snare & Trieste Company was the lowest bidder upon the lift type of temporary bridge, its bid being \$2,330. The only other bidders were Toole & Sunderlin, who bid \$2,341.65. The Snare & Trieste Company was also the lowest bidder upon the pontoon type of temporary footbridge. They asked \$1,770, while Toole & Sunderlin bid \$1,775 and M. B. Blakeman \$1,825.

Bedford, Ind.—The Commissioners of Company, Minneapolis, Minn., has been construction of four new bridges, as follows: One each to the Vincennes Bridge Company, and the Central States Bridge Company, and two to the Elkhart Bridge Company.

Huntsville, Mo.—The Standard Bridge Company, Omaha, Neb., has contract at \$10,050, to construct steel bridge in County.

Miles City, Mont.—The Security Bridge Company, Minneapolis, Minn., has been awarded a contract for \$9,960 for constructing a county bridge over Powder River. The bridge has two spans 150 feet each with 16-foot roadways.

Beaufort, N. C.—The G. & W. Manufacturing Company, 26 Cortlandt street, New York City, has been awarded the contract for constructing a through-truss-wing steel bridge over Gore Creek near Beaufort by the U. S. Engineer's Office, Wilmington, N. C., at \$16,347. The contract includes steel work, concrete abutments, pile driving and excavating.

Toledo, O.—The new bridge over Ten Mile Creek at Central avenue, at the entrance to Central Grove Park, will be a concrete arch construction; the County Commissioners have decided upon that class of bridge and let the contract to the Capital Construction Company, of Columbus. The price is \$17,600, about \$1,000 more than the low bids for a steel superstructure.

Franklin, Pa.—County Commissioners have received bids for furnishing labor and materials for shoring and reinforcing the highway bridge across French Creek at South Park street with piles and trusses, and Burford & Lundager, Franklin contractors, were awarded the contract. The following bids were submitted: Burford & Lundager, \$959.59; Samuel Burgard, Franklin, \$1,174; Northwestern Construction Company, \$1,250; Geo. H. Woods, Franklin, \$1,251; John Cribbs, Hawthorne, \$1,214.

Sharon, Pa.—A contract has been awarded by the Shenango Furnace Company to the Brown Holsting Machine Company, of Cleveland, for the construction of a large ore bridge at the works in Sharpville; the improvement will cost \$150,000 and will be used to convey iron ore from the piles to stacks Nos. 1 and 3; the bridge will be ready for use next July.

Cuero, Tex.—The Commissioners' Court has awarded the contract for erecting the Hochhelm Bridge to C. I. Horton, of Austin, for \$4,990.

El Paso, Tex.—Bids for the construction of the bridge from Fabens to the "Island," which was petitioned for by the residents and property owners of the latter place, were opened, March 1, by the County Commissioners. Three bids were received as follows: El Paso Bridge & Iron Company, \$3,795 (awarded contract); The Darbyshire-Harvie Iron & Machine Company, \$3,950; C. G. Sheeley, Denver, Colo., \$3,975.

MISCELLANEOUS

Fort Smith, Ark.—Council is considering ordinances authorizing a \$75,000 expenditure for five city park plots and \$20,000 for the purchase of 80 acres for a city cemetery; also adopted a resolution instructing Committee on Buildings and Grounds to investigate and report on feasibility of erecting a city market building, a City Hall and a city hospital.

Palo Alto, Cal.—Council has decided to call a special election to vote bonds for the erection of a garbage crematory and a concrete building for the municipal power plant; \$10,000 will be needed for the incinerator and \$2,000 for the site.

Placerville, Cal.—The City Board of Trustees has appointed Trustees Fox and Lehnpsel a Committee to purchase the paraphernalia necessary to enable the city to sprinkle the streets the coming season.

Redwood City, Cal.—Trustees are considering purchase of an incinerator; United States Furnace and Incinerating Company has offered to build one and sell it to the city for \$10,000.

San Francisco, Cal.—Plans and specifications have been adopted by the Board of Harbor Commissioners for the construction of Pier 36.

Visalia, Cal.—Bids will be received March 17, 5 P. M., for a City Hall and Fire Department building.—M. L. Weaver, Architect.

Hartford, Conn.—The Board of Finance

has reported favorably on request of city Plan Commission for a \$2,500 appropriation for expert advisers.

New Haven, Conn.—Benton Mansfield, Chairman of a Committee of the Federated Council of One Hundred, has recommended the establishment of a plant for the disposal of garbage, ashes, etc.; J. C. Knowlton, Chairman of the Recreation Committee, has recommended that the Mayor appoint a Playground Commission consisting of five members to formulate and submit a playground plan for the entire city.

Galesburg, Ill.—Citizens are urging the establishment of a playground for boys.

Evansville, Ind.—Mayor Nolan has recommended the establishment of three swimming pools in Mesker Park; also the construction of a greenhouse.

Fort Wayne, Ind.—The Board of Public Works has set March 22 as the date for the hearing on the plans and estimates for track elevation at Calhoun street and Fairfield avenue.

Terre Haute, Ind.—Council has passed ordinances authorizing the expenditure of \$27,000 for a new garbage crematory, to take the place of the present one, and \$12,500 for the purchase of a park site.

Davenport, Ia.—The Park Board will purchase the Case property in the Seventh Ward for a park site.

Winchester, Ky.—Council is considering the purchase of the old Court View Hotel site and the erection of a city building.

Mandeville, La.—Town has authorized the purchase of 200 barrels of shells; also appropriated \$150 for draining Flondres street into Little Bayou.

New Orleans, La.—The Public Bath Commission will erect public bath; shower baths only will be installed now; \$9,000 is available.

New Orleans, La.—The Dock Board has authorized work aggregating nearly \$800,000, and as soon as specifications for the steel required can be prepared by Consulting Engineer Coleman and Engineer Bell, contracts will be let.—Hugh McCloskey, President.

New Orleans, La.—The Orleans Levee Board has voted to procure bids for building a roadway and levee from the Halfway House to West End; about 115,000 cubic yards of dirt will be required and two bids will be called for, one for dry earth and the other for wet earth.

Portland, Me.—Bids will be received by the Public Buildings Committee for the erection of a new City Hall.

Cumberland, Md.—The Allegany County Commissioners have engaged Holmboe & Lafferty, architects, Clarksburg, W. Va., to draw the plans and specifications for an addition to the Allegany county jail; cost, \$25,000.

Boston, Mass.—Acting Mayor Brand has accepted on behalf of the city, the \$5,000,000 bequest of the late G. F. Parkman, for public parks.

Holyoke, Mass.—The Board of Public Works is securing prices on 200 four-way street signs.—Assistant Clerk Ferry.

Lawrence, Mass.—The Water Board has appointed a Committee comprising Chairman E. L. Arundel, Dr. Fleming and J. J. Desmond to confer with a Committee from the Park Department in the near future in regard to devising ways and means to improve the Lawrence playstead so that next fall and winter it may be successfully flooded for skating purposes.

Lincoln, Mass.—Town Council has ordered the immediate purchase of a stone crusher.

Detroit, Mich.—Council Committee on Public Buildings has authorized a \$40,000 appropriation for a new bathhouse and laundry on the West Side.

St. Paul, Minn.—The Board of Park Commissioners has passed resolutions directing the purchase of several lots to be added to the Jefferson playgrounds.

Wesson, Miss.—The Board of Aldermen has sold \$8,000 bonds to W. B. Jones, of Flora.

Nevada, Mo.—Council has appointed J. B. Robinson, W. E. Harper and Lafe Hood a Committee to purchase a street sweeper.

St. Louis, Mo.—Plans and estimates are nearing completion for a passenger and express subway from near the Eads bridge downtown to Taylor avenue, in the west end of the city, the cost of which has been figured at nearly \$10,000,000; four branch lines are also planned, an organization has been effected and all necessary capital pledged by New York capitalists; ordinance is being prepared to be introduced in the municipal assembly to give the corporation a franchise in April; name of the corporation has been withheld.

Atlantic City, N. J.—City will expend \$60,000 upon the police station and City Hall.

Bloomfield, N. J.—Town Council has ordered a \$30,000 bond issue for park purposes.

Jersey City, N. J.—The Twelfth Ward

Improvement Association is urging the establishment of public comfort stations.

Junction, N. J.—Borough has purchased a lot upon which to erect a Town Hall, Council room and quarters for Fire Department.

Keamy, N. J.—Council will soon receive bids for the erection of the new \$75,000 Town Hall; specifications and plans have been prepared by Architect Herbert Davis.

Newark, N. J.—The Legislature is considering a bill authorizing a \$2,000,000 loan for the construction of a municipal subway.

Newark, N. J.—The State Legislature is considering a bill authorizing \$200,000 bond issue for the development of the Essex County Park system.

Newark, N. J.—Council has voted \$5,000 to enable Mayor Haussling to conduct a further investigation of the ship canal and municipal dock project; also \$30,000 for the purchase of land.

Albany, N. Y.—Bids will be received soon by F. C. Stevens, Superintendent of Public Works, for constructing 18 winches for movable dams in the Mohawk and Genesee rivers; cost, about \$40,000.

Buffalo, N. Y.—Plans for the proposed park and playground on the square bounded by Spring, West Peckham, Mortimer and Hollister streets, have been prepared.—Chas. Schoenhut, President East Side Business Men's and Taxpayers' Association.

Niagara Falls, N. Y.—The Special Aldermanic Committee has recommended that Council establish playgrounds; Niagara Falls Power Company has offered the use of two acres of ground.

Cincinnati, O.—Council will be asked to adopt resolutions for the issuing of at least \$5,000,000 bonds; of this amount \$1,500,000 will be used for a new hospital, \$1,500,000 for a new House of Refuge and \$500,000 for parks.

Hamilton, O.—Proposals will be received for making tax maps or plats for the decennial reappraisal of 1910 in various districts.—J. E. Brake, Auditor, Butler County.

Lima, O.—The County Commissioners will erect a \$30,000 tuberculosis hospital three miles from this city.

Toledo, O.—The City Solicitor's Department has been instructed by Council to begin proceedings to condemn for park purposes the river bank strip above Walbridge park extending to Delaware Creek.

Toledo, O.—The City Hall Committee is considering the erection of a temporary City Hall.

Youngstown, O.—Council is considering an ordinance to issue \$5,000 bonds for acquiring land and improving South Side Park.

McAlester, Okla.—City has sold \$203,000 municipal bonds.

Oklahoma City, Okla.—Council has changed date of voting on the \$1,035,000 bond issue from April 6 to April 27.

Waurika, Okla.—Citizens have voted \$12,000 bonds for erection of City Hall.

Portland, Ore.—Seventh Ward citizens are urging the purchase of various tracts of ground in their part of the city for neighborhood parks.

Allentown, Pa.—Lehigh County Commissioners will erect a new \$150,000 jail annex.

Bradford, Pa.—Council has passed ordinance for the issuing of \$3,500 bonds for the erection of a building for the use of the Street Department and \$4,000 for the purchase of land for an armory.

Harrisburg, Pa.—Another tract of land, practically in the center of the city, has been deeded to the Park Commission to be beautified and laid out as a tiny park.

Philadelphia, Pa.—Ordinances approving and authorizing the extension of the Delaware avenue widening project have been favorably considered by the Highway Committee and reported back to Councils for action; there is \$500,000 of the \$1,500,000 loan item for the improvement of the port available for this work; total cost will be about \$1,000,000, and the plans provide for the widening north from Vine street to Fairmount avenue and south from South street to Christian.

Renovo, Pa.—Councilman C. H. Miller desires bids on street signs and house numbers.

Providence, R. I.—The Metropolitan Park Commission has voted to ask the General Assembly for a \$250,000 bond issue to carry out certain projects of the Commission.

Union, S. C.—City will erect a building which will contain the municipal offices, military barracks, opera house and Fire Department quarters; cost, \$10,000 to \$15,000.

Knoxville, Tenn.—The city budget for 1909 contains \$6,000 for the cleaning of streets with flush tanks.

Beaumont, Tex.—City has sold a \$50,000 wharf bond issue to the Gulf National Bank of Beaumont for \$52,650 and accrued interest.

Dallas, Tex.—Commissioner Doran has been authorized to purchase 100 new steel posts for street sign use.

BIDS RECEIVED AND CONTRACTS AWARDED

Sacramento, Cal.—The contract between the city and the Thompson-Sterrett Company for the construction of the new City Hall for \$173,000 has been signed by Mayor C. W. White and the officials of the company and is now in effect; bids for the work were given in issue of March 3.

Bids were received March 1 for an additional garbage incinerating unit at city crematory, and the following were opened: De Calre Incinerator Company, Minneapolis, Minn., \$30,000, or \$25,000 for plant and \$5,000 for the building; and the Powers Specialty Company, of New York, N. Y., \$24,000, not including the building.

San Francisco, Cal.—Bids were opened, Feb. 25, by the Board of State Harbor Commissioners for furnishing material and constructing Pier 34, and the contract has been awarded to the Associated Construction Company, 18 California street, for \$167,730; other bids received were as follows: Meroy, Elwell & Company, Oakland, \$184,000; Burrell Bridge Company, Oakland, \$185,700; Cotton Bros., Oakland, \$189,000; Hyde, Hayes & Company, 3 California street, \$179,890; Thomson Bridge Company, 103 Main street, \$182,000; Mercer, Fraser Company, 1525 Mission street, \$200,000; American Construction Company, 338 Pine street, \$168,900, and San Francisco Bridge Company, Monadnock Building, \$178,500.

Yuba City, Cal.—The Board of Supervisors has awarded to I. N. Roddier a contract for the construction of a cement coping around the Court House Square in this city; the coping will protect the grass and trees that make the grounds so attractive.

Middletown, Conn.—The contract for street sprinkling has been awarded to A. Brazos & Sons, Middletown, at \$2,360; Edward Hennessey bid \$2,395.

Jacksonville, Fla.—The Board of Public Works, March 6, opened proposals for the erection of a new crematory in the city from five companies, but it was impossible to award the contract, as each set of plans and specifications, which are voluminous, must be examined carefully and passed upon by the City Engineer, or other expert authority, before the Board will name the successful bidder; the Board has at its disposal for the erection of a crematory about \$50,000. The Lewis & Kitchen Company, of Chicago, Ill., submitted proposals upon various plants according to different plans and specifications filed with their bids. For a 40-ton plant their figures were as follows: Specifications A, \$19,400; B, \$23,600; C, \$25,800; D, \$26,300. 50-ton plant, specifications E, \$21,800; F, \$25,100; G, \$31,700; H, \$32,200. The Morse-Bulger Company, of New York, submitted just two proposals. They agreed to erect a 50-ton plant for \$15,000 and a 40-ton plant for \$13,900. The Powers Specialty Company, of New York, also submitted just two proposals on a 50 and 40-ton destroying capacity plant per day. Their figures being \$46,700 for the 40-ton plant, and \$49,900 for the 50-ton plant. Proposals by the Dixon Engineering and Constructing Company, of Toledo, were numerous, as this company submitted 22 distinct proposals on various types of construction on the two different styles of plant, ranging from \$12,500 to \$19,000. The Decarie Incinerator Company, of Minneapolis, proposals were for the erection of a 40-ton plant for \$39,000, and a 50-ton plant for \$42,000. All proposals submitted were for steel and concrete structures of fire-proof construction.

Indianapolis, Ind.—The lowest bids received by the Board of Works for City Hall was from Alling Construction Company, Chicago, for \$514,000.

Mandeville, La.—The Town Council March 1, received bids for the building of about 600 feet of breakwater, beginning at Adair street and running west, and the contract was let to Seymour Smith, he being the lowest bidder.

Brookhaven, Miss.—City has awarded contract to West, Rutter & Welch, of Brookhaven, at about \$2,000, for erection of brick jail; plans and specifications by E. McCormick.

Chester, N. H.—Committee has awarded contract to build the Chester Town Hall to Cyrus A. Martin, of Derry, at less than \$9,000; the work will be begun at once, and the building is to be completed by the 15th of August; the building committee is composed of Albert M. Hardy, George D. Rand, Edwin E. Jones, John M. Webster and George Ernest Gillingham.

Albany, N. Y.—The following are the bids recently received for the erection of a retaining wall to extend from the north side of the guild house north to Elk street; it will be 80 feet long, 30 feet high, 6 feet thick and will have six buttresses, extending from wall 20 feet to the foundation of the State Educational Building for the pur-

pose of holding solid the bank of earth and prevent any further landslides; R. T. Ford & Company, the contractors for the building, \$44,000; M. F. Dollard, of Albany, \$45,500; Hudson Valley Construction Company, Troy, \$46,990, and Peter Keeler Company, Albany, \$52,788.

Buffalo, N. Y.—Seven bids for the improvement of Subdivision A, Section 2, Buffalo River, were opened, March 6, in the office of Commissioner Ward, four from Buffalo and three from out-of-town contractors. E. M. Graves, of Cleveland, was the lowest bidder, offering to excavate from the river bed at 14 cents a cubic yard. His bid for protecting sheet piling was \$12 a linear foot. The estimated quantity to be excavated is 2,325,000 cubic yards, and the quantity of sheet piling, 500 feet. The cost of the work under Mr. Graves' bid will be \$331,500.

Ft. Michie, N. Y.—The Walworth Manufacturing Company, Boston, Mass., has secured contract for condensing plant, condenser, hot well, etc., for Ft. Michie, for \$4,955.

Ashland, O.—Contract was awarded, March 1, by Council for garbage disposal for one year to W. E. Finley, city, at \$5 per month; other bidders were, D. A. McConnell, Ashland, \$105; M. D. Shank, Ashland, \$59 (bid withdrawn).—Edgar Koehl, Clerk of Council.

Philadelphia, Pa.—Director Grady has notified W. J. Rulon, the successful bidder for the preliminary borings upon the pier sites at Vine and Dock streets, that he should proceed at once with the work, as the borings are necessary to complete the plans and estimates for the new piers.

INCORPORATIONS

American Sprayer & Supply Co., Champaign, Ill.; to manufacture machinery; capital, \$30,000. Incorporators: J. D. Wallace, L. B. E. Wallace, W. M. Tiffany.

Automatic Fire Protection Co., Wilmington, Del.; capital, \$200,000. Incorporators: Walter H. Page, Boston, Mass.; Frederick W. Cotton, Dedham, Mass.; Waterman L. Williams, Holden, Mass.

Biles Drier Co., Buffalo, N. Y.; to manufacture driers, drying machinery, presses and filter presses; capital, \$100,000. Incorporators: John W. Biles, Louisville, Ky.; William Strohm and Sidney A. Benedict, Buffalo.

Bridge & Structural Co., St. Louis, Mo.; capital, \$10,000. Incorporators: J. A. Clacker, Edward Flohr and George Grenzbebach.

Broadax Power Co., Greenville, S. C.; capital, \$5,000. Incorporators: C. C. Good, W. L. Gassaway, J. G. Cunningham and T. H. Cunningham.

D-B Control Co., New York, N. Y.; contracting and electrical work; capital, \$100,000. Incorporators: John Darby, 340 Springfield avenue, Summit, N. J.; Clifford D. Meeker, East Orange, N. J.; Harold D. Meeker, 166 East Seventy-second street, New York.

Henry J. Glasser Construction Co., Queens, N. Y.; construction, buildings, sewers, etc.; capital, \$10,500. Incorporators: Henry J. Glasser, Evergreen, N. Y.; John Glasser, Bleecker street, Queens; Conrad Garbe, Woodhaven, N. Y.

Investors' Engineering Co., New York, N. Y.; to promote engineering and industrial enterprises; capital, \$100,000. Incorporators: Theodore Starrett, 103 Park avenue; Jules Breuchaud, 290 Broadway; Philip B. Windsor, 1 Madison avenue, all of New York.

La Salle Engineering Co., 1417 Hartford Building, Chicago, Ill.; contracting and engineering; capital, \$5,000. Incorporators: Albert H. Tyrrell, Ned Reardon, M. B. McGonigle.

Maryland Engineering & Construction Co., Baltimore, Md. Incorporators: John E. George, 257 Roland avenue; W. Irving Walker and Peter R. Foley.

Newbern Gas Co., Newbern, N. C.; capital, \$100,000. Incorporators: Wm. M. Crane, F. H. Sawyer and L. I. Moore.

New York & New England Cement & Lime Co., Greenport, N. Y.; to manufacture cement; capital, \$3,000,000. Incorporators: Alfonso de Navarro, John R. Maxwell, Jr., New York; Howard W. Maxwell, Brooklyn.

New York Sand & Gravel Co., New York, N. Y.; sand, gravel and stone; capital, \$10,000. Incorporators: Jacob Friedman, 107 West 113th street; William Michaels, 60 East 74th street; Josephine E. Dolan, 100 West 102d street, all of New York.

North Sand Co., The Bronx, New York, N. Y.; to deal in sand and building materials; capital, \$10,000. Incorporators: William H. North, 539 Timson Place; Max Hirsch and James W. Hovey, 198 Broadway, all of New York; Arthur C. Hearle, Scarsdale, N. Y.

Pacific Construction Co., Quanah, Tex.; capital stock, \$10,000. Incorporators: H. A. Nicholson, Tom Mankins, Hunter Farrell and others.

PATENT CLAIMS

913,171. Fireman's Belt. James E. Smith, South Portland, Me. Serial No. 444,014. In combination, a belt, a hose carrier comprising means of attachment to the belt, a hook on the end and a handhold intermediate the hook and point of attachment.

913,338. Catch-Basin and Trap. John R. Williams, Milwaukee, Wis. Serial No. 454,510.

A device of the class described comprising a cylindrical casing and a hollow cylindrical trap open at both ends arranged eccentrically within and at one side of the casing, the lower end of the trap terminating in a reduced cylindrical extension, a ball float valve normally seating in the extension of the trap, and an inwardly projecting shelf formed at the upper end of said extension, said shelf forming a guard to prevent the float valve from passing above the upper or outlet end of the extension into the body of the trap.

913,685. Culvert. David C. Boyd, Gallon, O. Serial No. 467,642.

A culvert section comprising a body portion provided with end flanges, one of said flanges being formed with pliable tongues, and the other end flange being formed with slots.

913,686. Method and Apparatus for Atomizing and Spraying Oily Materials. Heinrich O. Brandt, Manchester, England. Serial No. 290,644.

The method of atomizing and emulsifying oily materials and applying same in a fine state of subdivision to road and other surfaces, comprising the dividing up of a small volume of the oil, drop by drop, by suitable revolving mechanism and carrying the same forward in the subdivided state by means of a large volume of an aqueous liquid substantially as described.

913,788. Snow-Road Machine. John Warcup, Lemesurier, Quebec, Canada. Serial No. 438,486.

A road-making machine comprising a pair of rollers, a frame supported on the rollers, a cutting blade adjustably supported from the frame, and means for adjusting the blade laterally and vertically.

914,066. Sewer-Trap. Ben Oakes, Detroit, Mich. Serial No. 398,295.

A sewer trap, having in combination an upwardly opening bowl whose walls are substantially perpendicular from the top edge to the normal low water line therein, a tangentially entering inlet portion on one side thereof, the bottom thereof being above the normal low water line in the lower portion of the bowl, a water seal portion depending below the low water line of the bowl from that portion of the wall opposite to the inlet portion, and a return bend with the opening from the inlet and from the lower portion of the bowl contracting thereinto, the outlet end of the return bend being at a lower level than the inlet, substantially as described.

ENGINEERING EXAMINATIONS

City Engineer.—J. H. Trusdale, City Clerk, Saskatoon, Sask., Canada, will receive applications for position of City Engineer until March 23.

Mechanical and Topographic Draughtsman.—The United States Civil Service Commission announces an examination, April 14-15, to fill vacancies in the position of mechanical and topographic draughtsman in the Isthmian Canal Service, at a salary of \$125 to \$150 per month. Application Form 1312.

Tracer.—The United States Civil Service Commission announces an examination, April 21-22, to fill vacancies in the position of tracer of mechanical drawings in the Isthmian Canal Service, at an entrance salary of \$100 per month. Application Form 1312.

Highway Engineers, Etc.—The New York State Civil Service Commission will hold examinations on March 27, 1909, for the following positions: Assistant Steam Engineer, State Institutions, \$40 to \$50 a month and maintenance; Chief Engineer, Westchester County Court House, \$1,500; Clerks and Junior Clerks (women), Erie County service; Electric Meter Inspector, Public Service Commission, \$1,080 to \$1,200; Elevatorman, Department of Public Buildings, \$900; Highway Inspector, all counties except Kings, New York, Queens and Richmond, \$3.50 to \$4.50 a day; Physical Instructor (woman), State Institutions, \$540 and maintenance; Statistician, State Departments, \$1,800 to \$2,400; Tariff Clerk and Typewriter, Public Service Commission, \$1,200 to \$1,500; Typewriter Copyist, Erie County, 4 cents per folio. The last day for filing applications for these positions is March 20. Address Charles S. Fowler, Chief Examiner, Albany.

PROPOSALS

BRICK PAVING

Kingston, N. Y.

Sealed proposals for grading of streets, regulating, furnishing and resetting curbs and for paving with repressed vitrified paving brick, first quality, block size:

Broadway, from Spring street to the northerly curb line of Albany avenue;

Main street, from the westerly line of the present pavement at Fair street to the westerly crosswalk at Wall street;

Wall street, from the southerly crosswalk at Main street to North Front street; and

North Front street, from the westerly crosswalk at Fair street to the westerly curb line of Crown street, a total of about 53,500 square yards.

Are invited and will be received by the Common Council of the city of Kingston, N. Y., at a meeting of said Common Council to be held in the Common Council Chamber, City Hall, in said city, on Friday evening, March 19, 1909, at 7:30 o'clock.

Notice to contractors for their information, form of contract, form of bond and guaranty bond, plans and specifications may be seen at the office of the City Engineer and City Clerk.

Proposals must be on forms supplied by the city and must be delivered to the City Clerk before 7 o'clock Friday evening, March 19, 1909.

The Common Council reserves the right to reject any or all bids or proposals not deemed for the best interests of the city, at any time before the contract is actually signed.

By order of the Common Council of the city of Kingston, N. Y.

Dated February 19, 1909.

DAYTON MURRAY,

(10-11) City Clerk.

PAVING, ALL MATERIALS

Notice to Contractors

Springfield, Ohio.

Sealed bids will be received by the Board of Public Service, of the City of Springfield, Ohio, at the office of the Clerk of said Board, Room 5, City Building, until 12 o'clock, noon, of Wednesday, March 31st, 1909, for the furnishing of the necessary labor and material for the improving of Fountain avenue, from High street to Perrin avenue (approximately 29,000 square yards) with asphalt, asphalt block, bitulithic, granitoid cement block, vitrified brick or block, wooden block or macadam, or Obispo brand of California asphalt, in accordance with the plans and specifications therefor, now on file in the office of the Board of Public Service. All bids must be submitted on blank forms which will be furnished upon application to the City Engineer.

Each bid must contain the full name of every person or company, interested therein, and be accompanied by a bond with two sureties to the approval of the Board, in the sum of \$1,000, or a certified check in like amount, upon some solvent bank, as a guarantee that if the bid is accepted a contract will be entered and its performance properly secured.

The envelope or wrapper containing said bid must be plainly marked "Bid for the paving of Fountain avenue."

The right is reserved to reject any or all bids.

By order of the Board of Public Service.

WM. H. MAHONEY,

(11-12) Clerk of Board.

DISPOSAL OF GARBAGE, ASHES AND OTHER REFUSE

City of Easton, Pa.

Sealed proposals will be received by the Department of Garbage Disposal for the City of Easton, Pa., at the office of the City Clerk, City Hall, until 3 P. M., of Monday, March 22, 1909, and will at said hour and place be publicly opened and read, for furnishing and erecting on the property of the City of Easton, Pa., a plant for the disposal by incineration of all garbage, ashes and other refuse collected in the city and delivered at the plant.

The approximate amount of garbage, ashes and other refuse to be treated is either twenty-five (25) or thirty-five (35) tons per day and contractors must bid on two plants, one having an actual capacity of twenty-five (25) tons per day and the other an actual capacity of thirty-five (35) tons per day.

The City Will Erect But One Plant

General Specifications will be furnished at the office of the City Engineer, City Hall, Easton, Pa., but bidders are expected to personally examine the proposed location and submit their own plans and detailed specifications, which must include the requirements and guarantees mentioned in the general specifications.

No bid will be considered unless accompanied by a certificate, showing the successful operation of at least one other refuse destructor similar to the type proposed in the bid submitted. Each proposal must be accompanied by a certified check for \$1,000 payable to and to be the property of the City of Easton, Pa., if the proposal is not carried out.

The successful bidder shall furnish a bond acceptable to a joint convention of Councils in the sum of the contract price of the plant, within ten days after the contract has been awarded to him.

The right to reject any and all bids is reserved.

JOHN MCNEAL,
City Engineer.

ERVIN F. SCHUG.

Chairman Department of Garbage Disposal.
Easton, Penna., March 1, 1909. (10-11)

SANITARY SEWERS

Muskegon, Mich.

Sealed bids will be received at the office of the City Recorder, Muskegon, Michigan, up to 12 o'clock noon of the 5th day of April, 1909, for the furnishing of the material and the performance of the work of constructing certain sanitary sewers in Special Sewer District No. 6.

Plans and specifications of the same are on file in the Recorder's office. Estimated cost, \$12,235.17.

Each bidder will be required to deposit with his bid 5% of the total amount thereof as security for the performance of the proposal tendered by him if his bid be accepted.

The City reserving the right to reject any and all bids.

BENJ. H. TELLMAN,
City Recorder.

MAIN SEWERS

Notice to Contractors

Clay Center, Kan.

Sealed proposals will be received at the office of the City Clerk of the city of Clay Center, Kansas, up till 7:30 P. M., March 29, 1909, for the construction of main sewers in the city of Clay Center, Kansas. Plans and specifications are on file in the office of the City Clerk. Additional information can be obtained by addressing Guy R. Martin, City Clerk, Clay Center, Kansas.

GUY R. MARTIN,
City Clerk.



Ask for Catalogue "E."

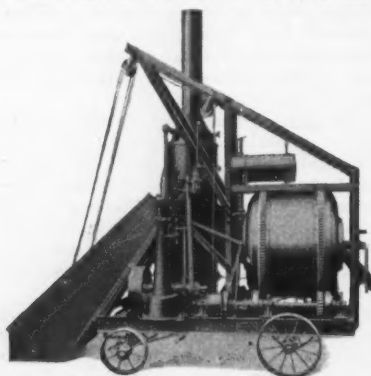
It is charged by a simple swinging scoop loaded directly from wheelbarrows, on a level with the ground, in advance of the machine—a charging device unequalled in simplicity, dependability and fewest number of parts in any other street machine in existence.

It is discharged by simply raising the inner end of the discharge chute taking out a barrow load, a cartload or the entire batch as desired—and, remember this, the quantity of discharge is always under perfect control.

Before you buy a street machine, get the records of the "Koehring."

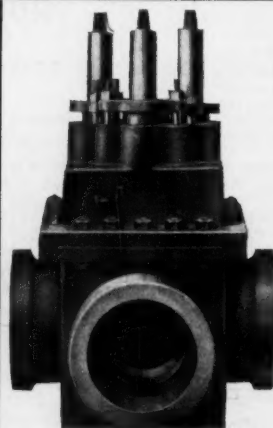
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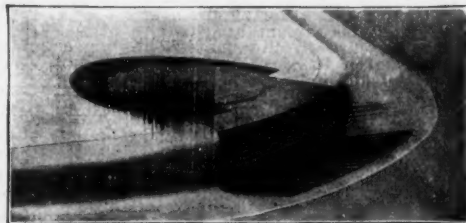
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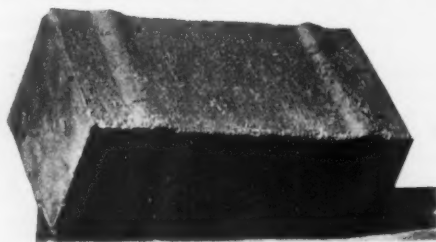


PHOTO OF WIRE-CUT LUG BRICK
(Patents Allowed)

there is no longer any necessity for injuring brick nor for increasing cost by repressing them.

Write at once for further information to

FRANK B. DUNN
Conneaut, Ohio

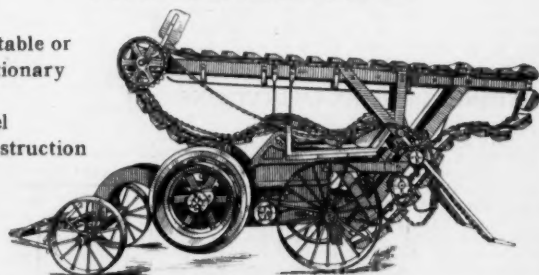
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Portable or Stationary

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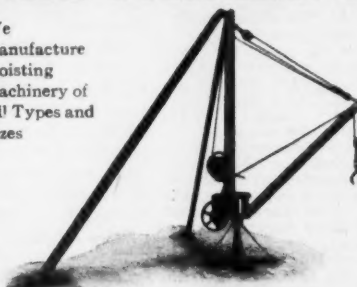
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